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[*Authors alone are responsible for the contents of their respective Papers.*]

SECRETARY'S NOTES.

1. *Council.*—Lieut.-Colonel W. Babtie, V.C., C.M.G., M.B., R.A.M.C. has been appointed to the vacant military seat on the Council, vice Field-Marshal Earl Roberts, appointed a Vice-President.

2. *Officers Joined.*—The following officers joined the Institution during the month of May :—

Captain C. C. M. Maynard, D.S.O., The Devonshire Regiment.
Captain E. G. Barton, R.N.
Sub-Lieutenant The Viscount Curzon, R.N.V.R.
Captain J. Chrystie, R.G.A.
Captain A. F. Fletcher, 17th Lancers.
G. F. S. Bowles, Esq., late R.N.
Lieutenant E. V. F. R. Dugmore, R.N.
Midshipman H. P. Rogers, R.N.
Lieutenant W. M. James, R.N.
Lieutenant F. E. M. Roe, R.N.
Captain W. de L. Williams, D.S.O., The Hampshire Regiment.
Captain S. G. Mullock, 4th V.B. South Wales Borderers.
Captain E. L. Ellington, R.F.A.
Lieut.-Colonel A. J. Barry, Engineer and Railway V.S.C.
Captain G. Christian, D.S.O., The Yorkshire Regiment.
Lieutenant C. H. Tyrrell, Indian Army.
Lieut.-Colonel H. Rose, Indian Army.
Captain E. L. H. James, Royal West Kent Regiment.
Captain C. F. Barber, R.M.L.I.
Colonel T. A. H. Davies, D.S.O., The Devonshire Regiment.
2nd Lieutenant Hon. E. L. R. Lloyd-Mostyn, Irish Guards.
Captain J. D. Waley, 6th Bn. Royal Fusiliers.
Lieut.-Colonel W. Matthews, C.M.G., Engineer and Railway V.S.C.
Captain F. P. Worsley, West Yorkshire Regiment.

3. *Extra Lectures* :—

Tuesday, 20th June, at 3 p.m.: "The True Cost of a Purely Voluntary System of Enlistment for every Branch of our Military Forces," by George F. Shee, Esq., M.A. Colonel The Lord Raglan will preside.

Monday, 26th June, at 3 p.m.: "The Siege of Port Arthur," by Ellis Ashmead-Bartlett, Esq., *Times* Special Correspondent with General Nogi.

4. *Reception.*—The Reception by the Council has been fixed for 29th June, between the hours of 9 p.m. and 12 midnight. Members desiring to be present who have not already applied for tickets are requested to do so as soon as possible, as the number of tickets is limited, and a very considerable number of applications has already been received. The tickets are five shillings each, and each member may introduce two guests.

5. *Lecture Cards.* — Numerous applications having been received for the Lecture List, members are informed that the cards are issued early in October and January. Extra lectures are announced in these notes.

6. *Change of Rank and Address.*—Members are reminded that it is essential, for accuracy of address, that they communicate any alteration in rank or address to the Secretary.

COMPARISON BETWEEN CONTINENTAL AND ENGLISH METHODS OF MILITARY EDUCATION.

By Colonel A. M. MURRAY, R.A.,
late Assistant-Commandant, Royal Military Academy.

Tuesday, 21st March, 1905.

Field-Marshal the Right Hon. the Earl ROBERTS, V.C., K.G., K.P., G.C.B., O.M., G.C.S.I., G.C.I.E., in the Chair.

INTRODUCTORY.

THE title written at the head of this paper was suggested as the outcome of a short professional tour, which was made in October last, round some of the Military Schools in France, Austria, Germany and Belgium.

The tour lasted from the 15th of October to the 3rd of November, the following being the localities and Military Schools visited:—

France ..	1.	École Polytechnique at Paris.
	2.	École Spéciale Militaire at Saint-Cyr.
	3.	École d'Application de l'Artillerie et du Génie at Fontainebleau.
Austria ..	1.	Artillery Cadet School at Vienna.
	2.	Technical Military Academy at Mödling.
Germany	1.	Cadet House at Potsdam.
	2.	Central Cadet Institution at Gross-Lichterfelde.
	3.	War School at Potsdam.
	4.	United Artillery and Engineer School at Berlin.
Belgium ..	1.	École Militaire with which is incorporated the École d'Application at Brussels.

It is proposed in this paper to state some of salient facts of interest, which came specially under notice during the tour, with the object of facilitating the comparison, which it is sought to make, between English and Continental methods of military education. Owing to the necessity of limiting the ground covered by the time available, attention will be particularly directed to those educational questions, which have come prominently before the Army and the Authorities since the termination of the South African war. The fringe of the subject can only be reached to-day. Longer and deeper investigation than is now possible is required before opinions can be

conclusively stated in regard to the many complex problems which surround the question of Military Education.

For convenience of narrative the paper is divided into four parts, each part being allotted to the discussion of a definite branch of the general subject under consideration. Part I. deals with organisation, Part II. with instruction, Part III. with examination, and Part IV. with character. The main purpose is to record facts, leaving others to draw inferences. Comments, however, are necessarily made, and opinions are sometimes expressed, in order to explain statements, and assist discussion. Such opinions—it is perhaps, needless to say—are not those of the writer, but of the many experienced authorities, who have been consulted both at home and abroad, with regard to the matters dealt with in the paper. Education in all its bearings on Civil and Military life has been made the subject of profound study on the Continent, and every opportunity was taken within the limited time available, not only to collect data, but also to ascertain the views of those engaged in educational work abroad.

During the course of this inquiry, it will be necessary to refer to controversial matters, in regard to which it is conceivable there may be more than one opinion among those present to-day; but effort has been made to deal with such matters with an open mind, and in a spirit of temperate consideration for all sides of the questions referred to. It only remains to apologise for the inadequate manner in which the task described has been undertaken, and to ask for the indulgence of your Lordship, and members of the Institution, while the paper is being read.

PART I.

Organisation.

"Organisation is indispensable to growth; beyond a certain point there cannot be further growth without further organisation."—*Herbert Spencer.*

It was hoped that this section of the subject might have been prefaced with a description of the central organisation, which exists in each of the countries concerned, for administering its military educational establishments, in order that a comparison might be made with the existing organisation at Army head-quarters in England; but owing to the limited time[1] available, it will be necessary to confine this part of the paper to a description of the organisation of the Continental military schools. Even this description must be curtailed, only sufficient detail being given to indicate the general arrangements of each of the institutions visited.

[1] For the same reason it has been necessary to exclude any comparison between the cost of military education abroad and at home. It may, however, be stated that the amount provided during the current year in the German War Budget for the education of cadets and officers is, in round numbers, £461,000, the French Budget providing £420,000 for the same purpose, as against some £42,000 included in the English Army Estimates. The annual cost to Belgium of the École Militaire at Brussels is rather more than £17,000. the cost of the Woolwich Academy being between £7,000 and £8,000. The amount of the vote taken for Military Education in Austria for 1905-06 is £198,673.

German Military Schools.

The Prussian Cadet Corps numbers some 2,600 cadets, who are accommodated in 8 cadet houses, situated in different towns [1] of the country, and also at the Central Cadet Institution at Gross-Lichterfelde, about 10 miles from Berlin. The cadet houses are the preparatory schools for the Central School at Lichterfelde.

The corps is commanded by a general (at Berlin), who has 2 military staff officers, and a civilian director of studies, to assist him. Boys are admitted to the cadet corps between the ages of 10 and 15. On joining they are first sent to one of the cadet houses, and as they grow older are drafted into the Central School at Lichterfelde, where they remain till they pass their examination for ensign (Fähnrich).

A visit was paid to the Potsdam Cadet House, which is typical of all the others. Each house contains about 200 cadets. The commandant is a major, and has an adjutant and head-master to assist him. There are 2 companies in each school, commanded by captains, each company being divided into 5 sections, commanded by lieutenants. The section forms the class for instruction.

The Central Cadet Institution at Gross-Lichterfelde contains about 1,000 cadets. The commandant is a colonel, assisted by an adjutant. The cadets are organised in 2 battalions, each commanded by a major, who has an adjutant as staff officer, and a civilian director of studies to assist him in his capacity as head-master of his battalion. For teaching purposes, the battalion is the unit for instruction, and has its own staff of professors and teachers. For purposes of military organisation the battalion is divided into 5 companies, which again are sub-divided into 4 sections each, the company being commanded by a captain, the section by a lieutenant. The company is the unit for discipline and interior economy, but not for instruction, either theoretical or practical.

The course of instruction at Gross-Lichterfelde is general, not technical, being identical with the course at one of the Real Gymnasien or semi-classical schools of Germany. No indoor theoretical military instruction is given, but the cadets are all taught infantry drill, riding, gymnastics, fencing, and swimming.

After passing out of the Lichterfelde school, the ensigns are sent to regiments for five or six months to learn their military duties as soldiers. They then go to one of the war schools, to receive their technical military education in such subjects as tactics, topography, fortification, etc. There are 11 War Schools in Germany,[2] 10 being in Prussia, and 1 at Munich, for the Bavarian Army. There is no War School in Saxony, the Saxon ensigns being sent to one of the Prussian War Schools to complete their education. The course at the War School lasts about nine months, at the end of which time the ensigns are required to pass an examination for officers' rank, after which they are appointed to their regiments as second lieutenants.

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[1] Bensberg, Goeslin, Karlsruhe, Naumburg, Oranienstein, Plon Potsdam, Wahstatt.

[2] Anklam, Cassel, Danzig, Engers, Glogau, Hannover, Hersfeld, Metz, Reisse, Potsdam.

Young officers of engineers and garrison artillery, after passing one year and nine months with their regiments, are then sent to the United Artillery and Engineer School at Berlin, where all do a year's course, while the engineers and certain selected garrison artillery officers are retained for a second year.

Saxony and Bavaria have their own cadet corps, the schools being at Dresden and Munich respectively; but these places were not visited, their organisation, and system of teaching, being on the same lines as in the Prussian schools.

French Military Schools.

The two cadets schools in France are the École Polytechnique which prepares cadets for the artillery, engineers, and public works department, and the École Spéciale Militaire, which prepares them for the cavalry and infantry. Cadets enter both schools between the ages of 17 and 21, by open competitive examination, and remain for two years under instruction. After passing out of the schools, they become sub-lieutenants, and go to their regiments for a year to learn their practical military duties. Artillery and engineer sub-lieutenants then go to the École d'Application, at Fontainebleau, for a year's course of technical instruction—a certain number being selected to remain a second year for a more advanced course. Their education is then complete, their appointments as officers are confirmed, and they are finally posted to their regiments. Similarly, cavalry cadets from Saint Cyr, after serving a year with their regiments, are sent to the cavalry school at Saumur. There is no École d'Application for the infantry, and infantry sub-lieutenants receive no further instruction after leaving Saint-Cyr.

The organisation of the École Polytechnique is much on the same lines as that of Woolwich and Sandhurst before the recent changes. The commandant is a general officer, with a lieut.-colonel as executive officer. The director of studies is a civilian.

The cadets come into the schools once a year in batches of 150 to 200, according to the requirements of the Services concerned. The cadets of each year are organised in 2 companies, there being 4 companies for the whole school. Each company is commanded by a captain, who has a lieutenant to assist him. These officers are charged with the outdoor exercises of the cadets. The indoor instruction is given by professors, assisted by *répétiteurs*, most of whom are civilians.

The establishment of cadets at Saint Cyr is at present 600, batches of 300 being taken every year. The cadets of each year form a battalion of 4 companies. The school commandant is a general, who has as assistant-commandant a lieut.-colonel, who is also director of studies. The military staff consists of a *chef de bataillon*, who commands the two battalions, with a captain and two lieutenants for each company.

During the first year the cavalry and infantry cadets are educated together under the same curriculum. At the end of the year a certain number, according to the requirements of the Service, are chosen to join the cavalry section in their second year of residence at the college. The cavalry section is commanded by a *chef d'escadron*, who has two captains and eight lieutenants as his assistants.

The officers of the military staff, who are separate from the indoor teaching staff, are charged with the practical military instruction of the cadets—this instruction being given by companies.

The course of indoor instruction resembles that of the Royal Military College, with the addition of the subjects of geography and free-hand drawing, which are not taught at Sandhurst.

The Artillery and Engineer School at Fontainebleau was reorganised in July, 1903, and is the most up-to-date establishment of the kind in France. The commandant of the school is a general officer, who has a captain as staff officer, and a colonel as assistant-commandant and director of studies.

The course of instruction is bifurcated, the young officers of engineers and artillery—the latter of whom are divided into European and Colonial artillery— being instructed under a separate curriculum, except only in the subjects of military history and geography, when there is a common programme for all officers. On joining the school the young officers are organised according to arms in three groups—European Artillery, Colonial Artillery, and Engineers. A major has charge of each group, and is responsible to the assistant-commandant for the theoretical education as well as the military instruction of those under him. He is assisted by the captain-instructors, of whom there is 1 for every 25 young officers. For the indoor instruction there are 7 professors, with assistants as required.

The Cavalry School at Saumur is organised on much the same general lines as the Fontainebleau school, a preponderance being given to outdoor military instruction.

Belgian Military Schools.

The only cadet school in Belgium is the École Militaire, at Brussels. Cadets enter this school by open competition between the ages of 17 and 21. They remain two years at the school, after leaving which they become sub-lieutenants. The entrance examination is the same for all candidates, except in mathematics, which is of a higher standard for those wishing to join the Artillery and Engineers. After admission to the school there is a bifurcated course of instruction, one for the Cavalry and Infantry cadets, and the other for those intended for the artillery and engineers. When they have finished their two years' course at the school the Cavalry sub-lieutenants go to the cavalry school at Ypres, where they complete their technical instruction in riding and cavalry duties before joining their regiments. The Infantry sub-lieutenants go to the Infantry École d'Application at Beverloo. The Artillery and Engineer sub-lieutenants pass into the École d'Application for those arms, this school being affiliated to, and under the same management as, the École Militaire at Brussels. The course at the École d'Application is for 2½ years, at the end of which period the young officers, if they pass their final examination, are confirmed in their commissions and join their corps.

The internal organisation of the École Militaire at Brussels differs from that of any other Continental military school, and presents some features of special interest. The Artillery and Engineer cadets are organised in two classes, or promotions, one for each year, the Cavalry and Infantry cadets being similarly organised.

There are thus four classes continually in existence. Each class has as its directing head an inspector (*Inspecteur des Études*), who takes over a batch of cadets when they join, and remains with them throughout their service at the school. The functions of these inspectors largely correspond to those of house masters at an English Public School. They act as indoor commanding officers of their classes, and are responsible for the moral and intellectual training of their cadets in every particular.[1] Among the specific duties which they have to perform are the preparation of the time-tables of instruction for submission to the director of studies, keeping the roll of marks and statistics of attendances, framing periodical reports, and presenting their cadets for examination before the appointed juries, the sittings of which the inspector attends in capacity of secretary.

For indoor instruction the inspectors hand over their classes to the professors and *répétiteurs*, 32 of whom are military officers and 10 civilians, and for out-door drills to the captain-instructor, who has 3 lieutenants as assistants, each of whom takes a weekly tour of duty.

Austrian Military Schools.

In Austria there are 16 Infantry cadet schools, 2 Artillery cadet schools (one being for Field, the other for Garrison Artillery cadets) and 1 Engineer cadet school. There are also 2 military Academies, one (*Technische Militärakademie*) at Mödling, 15 miles from Vienna, intended for the advanced instruction of Artillery and Engineer cadets, the other (*Theresianische Militärakademie*) at Wiener-Neustadt for the advanced instruction of Cavalry and Infantry cadets.

As in Germany, so in Austria, the State begins the education of military cadets at an early age, the majority of the cadets being taken as soon as they reach the earliest qualifying age of 14. They may, however, be admitted up to the age of 20. Austrian cadets remain 4 years at the Artillery, Engineer, and Infantry schools, and 3 years at the Cavalry school. After passing out of the school they go as cadets to their regiments, serving as such till vacancies occur for them to fill as sub-lieutenants. There are no war schools in Austria as in Germany, the education of the young officer being

[1] The general scope of the duties of the inspectors may be best described in the language of Colonel Leman, Director of Studies at the École Militaire:—

"Les Inspecteurs des Études sont sous les ordres directs du Directeur des Études.

"Ils sont responsables envers lui de l'application des élèves sous tous les cours, et sous tous les travaux intellectuels, qui leur sont imposés. Ils proposent au Directeur des Études des punitions ou des récompenses pour les élèves, et, en général, toutes les mesures d'ordre, ou de police, qui peuvent assurer au travail des jeunes gens un meilleur rendement.

"Ils sont les véritables chefs directs des élèves qui leur sont confiés; ils sont chargés de leur donner l'esprit militaire, et de leur inculquer les principes d'honneur, et les qualités morales, qui doivent être l'apanage des officiers.

"Leur action doit être constante, sévère, mais paternelle; ils doivent absolument obtenir la confiance de leurs élèves afin de pouvoir les éclairer et les protéger efficacement lorsque besoin en est."

completed in the cadet school and regiment. It is not compulsory for cadets to join either of the military Academies, and only a small proportion do so. Cadets trained at these Academies have the advantage of being promoted sub-lieutenants when they leave the Academy, instead of having to serve for a period as cadets with their corps.

The organisation of the Austrian cadet schools is somewhat different to that of other Continental military schools, inasmuch as the teaching and discipline staff are amalgamated. The commandants are majors, each having an adjutant for general staff duties, and an administrative officer for finance. Certain officers are detailed as company officers, but they instruct indoors, as well as perform the military duties of their companies. All officers have some duties allotted to them in addition to their duties as teachers. In the Artillery Cadet School at Vienna the commandant is himself director of studies, the adjutant teaches geometry, the commander of No. 1 Company teaches tactics, of No. 2 Company German and geography, of No. 3 Company chemistry, and so on. The company is the unit for all purposes of instruction and discipline, but the indoor instruction is not confined to the officers of the company. There are no civilians employed in the Austrian cadet schools, the teaching staff being wholly composed of military officers.

Comments.

It will be seen from the above description of the various military schools visited that, except only in the Austrian cadet schools, there is not so complete an amalgamation of theoretical and practical training as now exists at Sandhurst and Woolwich, where the cadets have lately been organised in instructional companies, the company commander and his officers being required to carry out both the indoor and outdoor teaching of military subjects, while the scientific subjects and foreign languages are kept outside the company curriculum.

The question of unification is, however, now being discussed on the Continent much in the same spirit as it has recently been discussed in England, with a view to bridging as far as may be possible the gulf between "*Commandement*" and "*Enseignement*," the necessity of binding theory and practice together being obvious to all who comprehend the continuing developments of modern warfare.

In France the principle of unification has been largely given effect to in the reorganised *régime* of the Artillery and Engineer school at Fontainebleau. Whereas previous to 1903, there were two separate directors under the general commanding the school, one for indoor studies, the other for outdoor military instruction; now there is only one assistant-commandant, who has consolidated charge of the whole curriculum of training both in and out of doors, responsibility for discipline and interior economy being likewise vested in his hands. In obedience to the same principle of organisation, the majors in charge of the Artillery and Engineer sections of young officers, as well as the captain-instructors in charge of sub-sections, are now held responsible for the theoretical education as well as for the practical military instruction of those placed under them. Although there is a staff of professors, whose functions are confined to lecturing on the scientific subjects included in the curriculum,

the captain-instructors are required, according to their capabilities, to assist in the indoor as well as in the outdoor teaching.[1]

With regard to the cadet colleges in France, a scheme has been before the Minister of War for some years for reorganising Saint-Cyr on identical lines with the new organisation of Woolwich and Sandhurst. Colonel B. Faurie, of the French General Staff, is the author of this scheme, having based his proposals on the same grounds as those urged for the changes in the English military schools—the evil of dualism of training, and the increased educational advantages of bringing cadets and their instructors together for a lengthened period in small instructional companies.[2] The latest information from France gives reason to believe that the new system will be introduced into Saint-Cyr, together with other changes, in the course of the current year.

Without dwelling further on this matter it is satisfactory to know that the English colleges have led the way to a reform which was recommended as long ago as 1869 by the Royal Commission presided over by Lord Dufferin,[3] and again urgently pressed on attention by the Military Education Committee of 1902.[4] The change is not the result of empirical opinion, but is due to influences which have been long at work, and which asserted themselves with undeniable force during the war in South Africa.

Command and instruction are now synonymous terms in the military vocabulary, and if the recognition of this truth has been tardily accepted, this is only another proof of what Montaigne called the "imperious power" of Use and Custom, which always range themselves on the side of resistance to reform. *Usus efficacissimus rerum omnium magister.*[5]

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[1] The following are the terms of the regulation defining their functions in this respect :—

"Les capitaines de l'état-major instructeurs peuvent être designés pour faire des interrogations sur certains cours et quelques conférences, en vue de séconder les professeurs et leurs adjoints. Il est tenu compte, dans cette désignation, de leurs aptitudes spéciales."

[2] En faisant *un tout* de la compagnie, les mêmes officiers se trouveront en contact fréquent avec leurs élèves, pour qui ils seront comme des modèles vivants. Ce sera un moyen d'arriver à donner cette éducation militaire dont j'ai signalé et regretté l'absence à Saint-Cyr.

Je ne veux pas dire, comme on paraît toujours le croire, que le même officier donnera toute l'instruction; personne ne pourrait suffire à une pareille tâche. Ce que je veux, c'est que la compagnie de 90 élèves forme une sorte de famille, dans laquelle les élèves viendront recevoir l'éducation et l'instruction militaires."—*La Réforme de Saint-Cyr, par un Saint-Cyrien.*

[3] "We propose altogether to abolish the distinction which has hitherto existed between the instructional and executive staff. By this amalgamation the instruction will probably gain in efficiency when it proceeds from persons charged with the duty of enforcing discipline."—*First Report of the Royal Commission on Military Education, 9th August, 1869.*

[4] "It is also essential that the same officers who give theoretical instruction should give instruction in practical work, teaching the cadets their drill and their duties in the field and in barracks."—*Report of Committee on Military Education, March, 1902.*

[5] Pliny, "Nat. History," Lib. XXVI., Cap. 21.

PART II.

INSTRUCTION.

"I think the general standard of education is not sufficiently high in the Army."—*Field-Marshal the Earl Roberts, V.C., K.G., etc.*

a. Selection of Instructors.

The selection of officers as instructors in the Continental military schools is done much in the same way as in England, the initiation resting with the school commandant. There is always an abundant supply of candidates, education work being regarded with great favour on the Continent. At the École Militaire in Brussels there are 32 military officers on the teaching staff, and only 10 civilians. In the cadet school at Lichterfelde there are 49 military officers and 48 civilians. In the war schools in Germany the instructors are wholly officers. At the École Polytechnique at Paris artillery and engineer officers were found working alongside of the civilian professors. At Saint-Cyr all the instructors are military officers (except the language and drawing masters), receiving no extra pay, except the allowances which all officers who live in the Paris district are granted for expenses. The same remark applies to the École d'Application at Fontainebleau. "In the Austrian Army," writes Mr. Wickham Steed, the *Times* correspondent at Vienna, "officers employed on education duty enjoy special prestige. They must be most favourably reported on by their superiors before they can be selected, and when appointed are looked up to by their comrades on account of their special knowledge and intellectual attainments."[1]

The period of employment of officers as instructors was found to vary considerably. In France, education appointments are for 4 years, with frequent extensions to 5. In Germany the officers are appointed for 5 years. In Belgium the officers at the École Militaire are appointed for 10 years, and are frequently re-appointed. The present director of studies has been 18 years at the school, during 9 of which he has held his present post. In Austria officers employed as instructors frequently remain so employed during the whole of their service, the commandants of the schools who have no executive teaching duties only holding their appointments for 4 years. What governs employment is efficiency.

The advantages of retaining efficient teachers for lengthened periods in their employment were constantly brought to notice during the progress of the tour. Where changes are perpetually going on in a school it is not possible to form educational traditions, and establish a progressive programme of instruction based on the accumulated work of an experienced teaching staff. Having regard to educational

[1] The extra duty pay which they receive is very small, the chief inducement to employment being the rule which allows officers on education duty to count every year of service as 16 months for purposes of pension.

interests, a 3-year period of employment for military instructors is considered on the Continent to be too short for efficiency.

In all cases it was found that the civilian teachers continue throughout their lives at their posts, subject to their remaining efficient, and receive pensions at ages varying from 60 to 65.

It may here be thought convenient in the public interests to call attention to the unsatisfactory position of the civilian instructors employed at Woolwich and Sandhurst as compared with the position of their Continental brethren, and of their own military colleagues. The terms of their engagement include no provision for superannuation, and when they become too old for work they are dismissed without pension. Although a recommendation was made in the report of Mr. Akers-Douglas's Committee [1] that if civilian gentlemen were employed at the Royal Military Academy to teach mathematics they should be placed on the same footing as civil servants, and although the matter has no doubt received the careful consideration of the War Office, there has apparently not yet been time to submit any proposal to the Treasury dealing with this question. It would seem desirable that not only the mathematical teachers but all civilian instructors employed at the military schools should be classed together for pension purposes. An assured career makes for efficiency.[2]

Before leaving this part of the subject under discussion it may be remarked that the efficiency of the German teachers, as testified to by English visitors, is in no respect exaggerated. In going round the class-rooms at the Lichterfelde cadet school nothing could be more impressive than the manner in which the instruction was carried out—the complete hold of teacher over pupil, the perfection of the touch between the two, the interested attention of all, the spirit of eager competition manifest in every face, and the general earnestness which pervaded the whole class. In Germany the art of teaching has been made a profession, and the thoroughness with which the profession is studied has caused the Germans naturally and undisputedly to take the first place among nations abroad as leaders of educational opinion. With all their enthusiasm for learning and literary culture French scholastic organisation is not nearly so perfect a machine, nor are French educators so thoroughly trained to their duties as are those of their hard-headed, business-minded neighbours on the other side of the Vosges.

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[1] "The committee wish to point out that any gentleman employed for this purpose (mathematical teaching) should be placed on a footing of a civil servant. Hitherto civilians employed as instructors have been paid small salaries, and have not been able to earn a pension or a retiring allowance; such a system must obviously tend towards inefficiency."—*Report of Committee on Military Education, March, 1902.* P. 18.

[2] The allusion to this question recalls the story related in one of Schiller's plays, of the master who dismissed his Moor servant with the words: "The Moor has done his work, the Moor may go." As Sir Arthur Helps truly observes in his book, "Thoughts upon Government," the reflection contained in those few simple words is a very chilling and depressing one, and it is not desirable that it should enter largely into the minds of those who are connected with the public service.

b. Principles of Education.

The principle that technical training must be built on the foundation of general education is everywhere accepted on the Continent. In Germany the principle is a special article of faith. Until the cadets pass their ensign's examination at the Lichterfelde School, their education has been wholly general and framed on the same lines as the instruction given in any of the Prussian real-gymnasien[1] State schools. The subjects taught are, Latin, German, French, English, religion, natural history, mathematics, history, geography, chemistry, physics, and drawing. It is not till the cadets leave the Lichterfelde School, and enter the war schools, that their technical education is begun in such subjects as tactics, fortifications, military topography, etc.

In Austria the same principle is observed, and although there are no war schools as in Germany, and the education of the young officer is completed in the cadet school, the fact of his remaining there four years enables the course of study to be comprehensive, starting with subjects of general education, and gradually working up in the fourth year to the technical military subjects.

In France, though the course of study at the École Polytechnique is less liberal than in the German and Austrian cadet schools, and more exclusively scientific, it insists on theoretical teaching of a high standard, and postpones,[2] the serious study of military subjects till the cadets eventually go as young officers to the École d'Application at Fontainebleau.

In the case of Woolwich and Sandhurst, there has been a recent tendency to emphasise the technical side of the instruction, and to confine the general and theoretical teaching within the narrowest possible limits. "With regard to instruction"—the quotation is from the Report of Mr. Akers-Douglas's Committee—"the Committee are of opinion that this should be confined to technical and professional subjects. The cadet is presumed to have completed his general education upon his entrance to the Academy, and there is no adequate reason for continuing this within the Academy itself."[3] In pursuance of this view, the Committee went so far to advise the discontinuance of the study of modern languages inside the two military colleges, and added a recommendation that the scope of the mathematical and science instruction at Woolwich should be restricted to purely utilitarian objects. Among Continental educationalists this

[1] There are three types of secondary schools in Prussia: the fully classical (gymnasien), the semi-classical (real-gymnasien), and the non-classical (ober-real-schule). Greek and Latin are both taught in the 1st type of school, Latin only in the 2nd, and neither Greek nor Latin in the 3rd type.

[2] In reference to the scope of the military instruction given at the École Polytechnique, the official instructions point out as follows:—

"L'objet de cette instruction militaire est de donner aux élèves les notions élémentaires, théorétiques, et pratiques, suffisantes pour qu'à leur sortie de l'école ils puissent accomplir un stage d'une année dans les régiments d'artillerie ou du génie en qualité de sous-lieutenants."

[3] P. 16, Report of Committee of Military Education (1902).

part of the Committee's Report would be regarded as advocating a system of too exclusive and premature specialisation.

How different a view of this matter is taken in France may be seen by perusing the syllabus of the course of construction at the École Polytechnique in Paris. A higher standard of scientific knowledge is exacted than in any other English or Continental military school, and while utilitarian necessities are not lost sight of, a wide and liberal scope is given to the teaching, with the purpose of encouraging research, and stimulating the intellectual ambitions of the cadets. The course of instruction is not confined to science, but is broadened by the inclusion of German language and literature, while the subject of French history and literature also forms part of the curriculum, showing that French educationalists are alive to the value of liberal education, and do not allow it to be extinguished by the exclusive pursuit of science.

Having regard to recent discussion in England, it is interesting to note how great importance is attached abroad to the study of geography, which is included in the curriculum of every cadet school visited, except in that of the École Polytechnique, in which case the study of the subject is left to be followed up in the School of Application at Fontainebleau.

Free-hand drawing is another subject upon which value is placed on the Continent. It is considered that a young officer should be trained to express on paper what comes under his eye. The training of the hand to follow the eye quickens observation and teaches it to be accurate. In Germany free-hand drawing is included in the curriculum both of the cadet schools and the United Artillery and Engineer School at Berlin, while in the French, Belgian, and Austrian schools the subject receives full consideration.

c. System of Teaching.

The system of teaching common to all Continental military schools is primarily by lectures, the cadets taking notes. Lectures nowhere exceed 1¼ hours in duration, and in the German schools are limited to 50 minutes. The lecture, however, is only the introductory step to the teaching, the lecturer supplementing his set remarks by verbal questions and answers, and by calling out cadets in turn to work problems on the black-board in the presence and hearing of their colleagues in the class.

In every class-room which was visited at the Lichterfelde school, as likewise in the higher military schools in Prussia, this procedure was found to be adopted. During the visit paid to the École d'Application at Brussels, Colonel Leman, the director of studies, took the visiting officers into a room where the young officers were engaged in private study, and going round the room he gave each student a problem to work out on the black-board in the presence of the visitors. The ease and freedom from hesitation with which the young men worked and orally explained the problems given to each was very remarkable, seeing that the visit was wholly unexpected. One of the young officers in the room gave a short historical lecture on Vauban's systems of fortifications in excellent English language.

This system of oral teaching is a marked feature of Continental methods of instruction, and is found to be valuable in quickening the intelligence and training the voice to give rapid expression to what passes through the mind. It teaches readiness of speech, shakes off diffidence, and enables the cadet early in life to acquire the habit of himself imparting instruction. No one who watched the system at work could help being impressed with a sense of its educational use in training both mind and character.[1]

Foreign methods are not always applicable to English ways, but it may be borne in mind that the system of teaching indicated above is not confined to Continental military schools, and is equally practised in America. It is a special feature of the West Point Academy teaching, and has been frequently called attention to in official and private reports. The most recent testimony to the efficiency of the system is from Sir Howard Vincent, himself a Sandhurst graduate, and whose opinion, after a visit to West Point last autumn, is quoted in the footnote below.[2]

Before passing to the next section of this paper, it is satisfactory to note that the outdoor training of English cadets is now being carried out on much the same lines as has been described above for indoor teaching. Throughout their course at the Woolwich Academy cadets are habitually required to fall out of the ranks, and learn not only how to give words of command, but also how to impart instruction to their comrades. This method of alternating the duties of learning and teaching on drill parades is producing the best of practical results, its efficacy having been repeatedly testified to by the reports of successive inspecting officers. Nowhere on the Continent, not even at the Lichterfelde cadet establishment and the Prussian war schools, is this system of outdoor training so fully developed as is the case at Woolwich at the present time. What is now advocated is the application of similar methods in the class-room, in order that the young officer may be able to instruct his men in the theory as well as the practice of their profession. The day has passed away when an officer could limit the scope of his duties to work in the field. Much must in future be done indoors as a preparation for outdoor training. Power of command now means power to teach.

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[1] Mr. George Saunders (*Times* correspondent in Berlin), who has lived 13 years in the Prussian capital, writes as follows regarding the results of the German system of education :—"I find that the intellectual apprehension of the average educated German is at least, on a rough computation, ten times quicker than that of the average educated Englishman."

[2] "Our great fault is that though many of our officers are men of the greatest technical knowledge they have no power of imparting their knowledge to the non-commissioned officers and men under them. In every class-room at West Point there is a large slate inset in the wall for each cadet, and each in turn is called upon to repeat the demonstration of the various problems that are set, the proper method of attacking them, and the means by which he arrives at the correct result. This gives a facility of expression which our people want, and which they should be taught to acquire."

PART III.

EXAMINATIONS.

"At the present time, whether for good or for evil, education is dominated by examination.—*Report of Military Education Committee (1902).*

1. *Entrance Examinations.*

In Austria and Germany admission to the cadet colleges being by nomination, the entrance examinations are held for matriculative purposes only. They are conducted by the school authorities solely with a view to testing the elementary education of the nominee. In France and Belgium the examinations are open and competitive, and without going into details it may be said that in both countries immense pains are taken to ensure their being a test of the general education of the candidates before they are admitted to the cadet colleges for technical training. While the competitive principle is scrupulously safeguarded, this is never allowed to interfere with the function of examination as the test of education. In both countries there is a preliminary examination (*examen du premier degré*) intended to test the general antecedent education of the candidates, and having for its object to weed out all who show that they possess an imperfect groundwork of common knowledge. This is followed by a competitive examination (*examen du second degré*), which determines the selection and classification of those who are found qualified by the first test. In France, in addition to the qualifying examination, a candidate is required to produce a certificate showing that he has passed an examination entitling him to a degree in the first part of the course of the public secondary education curriculum[1] as laid down by the Minister of Public Instruction.

Comparing the above described procedure with that which has been so long established in England, but which is now about to be altered, it will be found that the English system wholly differs from that of France and Belgium. Ever since the report of the Royal Commission presided over by Lord Dufferin, the object of the Woolwich and Sandhurst entrance examinations has not been to test the education of the candidates, but to select the fittest of them.[2] The most complete confidence was placed by the (Dufferin) Royal Com-

[1] The candidate may elect to pass either for a classical or non-classical degree. The classical curriculum includes both Latin and Greek; the non-classical Latin and science.

[2] "The main object of the Army entrance examinations is not to test whether the competitors have had a sound general education, but, assuming that they have already received such an education in the public schools, to select those who have taken the most advantage of it.—"*Times*," *12th June, 1902. Letter from Mr. J. W. Courthope, C.B., First Commissioner, Civil Service Commission.*

missioners in the curriculum of the Public Schools,[1] and when the conduct of the examinations was handed over to the Civil Service Commissioners, their first and ultimate object was to adapt their examination machinery to suit the school curriculum.[2] Whether the education, which the candidates received at the Public Schools, was effective, or the reverse, was not considered to come within their jurisdiction to inquire, the question having been previously decided by Lord Dufferin and his colleagues. Their duty, as they understood it, began and ended with selection. Thus it came about that examination, which ought to be the instrument of education, has gradually become nothing more than a mechanical machinery for selecting the fittest among the candidates whom the Public Schools wished to send into the Army. Lord Dufferin's Commission gave the Public Schools a blank cheque, which the headmasters have drawn upon for the past 30 years, with the results which were brought to light by the report of Mr. Akers-Douglas's Committee.[3]

The efforts of the Civil Service Commissioners to carry out the policy recommended by Lord Dufferin's Commission were at first only partially successful, the returns for 1888-89 showing that not more than 33 per cent. of the Woolwich, and 12 per cent. of the Sandhurst cadets, came into the colleges direct from the Public Schools. This induced the present First Commissioner, who had been appointed Third Commissioner in 1887, to recommend the adoption of certain steps, which had for their object to draw more candidates from the

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[1] Convinced as we are by the unanimous testimony of the witnesses who have alluded to the subject that our public schools, as at present constituted, furnish the very best material for officering the Army, we have endeavoured to provide every facility to the youth of England to pass directly from their public school into Woolwich and Sandhurst without requiring any additional tuition." —*Report of the Royal Commission on Military Education, 9th August, 1869.*

[2] *Ibid.* "To the general character of the entrance examinations recommended by us we have already alluded. They have been designed with special reference to the curriculum adopted at the most advanced of our public schools, and with the express intention of enabling the competitors to come straight from one of those establishments to the examination hall without having occasion to resort to any intermediate place of study. With this view all subjects have been carefully excluded from the list which do not enter into the course of instruction at one or other of our great public schools."

[3] "In the course of their investigations the Committee have been impressed by the widespread dissatisfaction—a feeling expressed by practically all witnesses—with the present state of education, both military and general, among the officers of the Army as a class. Officers are stated to be deficient in general education. The Commander-in-Chief has expressed himself as dissatisfied with both the general and technical education of the officer; and many other witnesses have stated that it is no uncommon thing to find officers unable to write a good letter or to draw up an intelligible report. The general trend of the evidence, in short, is to indicate that the early education of the young officer has not hitherto been conducted on proper lines."—*Report of Military Education Committee, March, 1902.*

Public Schools to the exclusion of those who were sent up by the private establishments. "Soon after my appointment"—the quotation is from a letter of Mr. Courthope's to the editor of the *Times*[1]—"I called Mr. Stanhope's attention to this matter, advising him that the remedy lay in reducing the maximum limit of age for entry into Sandhurst from 20 to 19, so as to bring it into harmony with the age of leaving Public Schools, and altering the system of marking in the scheme of examination, so as to conform more closely with the course of education in those establishments." These recommendations, which were adopted, had the desired effect, the statistics for 1902 showing that 78 per cent. of the Woolwich and 55 per cent. of the Sandhurst cadets came into the colleges direct from the Public Schools.

It was not until the military authorities discovered the faulty state of Public School education, as indicated in the report of Mr. Akers-Douglas's Committee, that they determined to take up for themselves the question of the antecedent training of Army officers. Instead of trusting any longer to the curricula of the Public Schools they decided to lay down the principles[2] which should govern the general education of Army candidates, and frame a syllabus of examination[3] which in their opinion, formed after long consideration, would give effect to those principles. Instead of adopting the examination to suit the curricula of the Public Schools, the War Office is now going to ask the headmasters to adapt their curricula to meet the requirements of the new syllabus of examination. This involves a complete departure from the policy of the Royal Commissioners of 1869, by whose recommendations both the military authorities and their examining agents, the Civil Service Commissioners, have been guided during the past 30 years in selecting candidates for commissions; but after the publication of the report of the Military Education Committee (1902) no alternative was possible to the course adopted. The new departure taken by the War Office is, from an educational point of view, of the most revolutionary character, and will disturb the machinery of the Public Schools for years to come;[4]

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[1] *Times*, 12th June, 1902. Letter by Mr. W. J. Courthope, C.B., First Commissioner, Civil Service Commission.

It must be borne in mind that the Civil Service Commissioners are not an independent body appointed to determine educational questions of policy, but are only the agents of the War Office for carrying out the examination of candidates for commissions in the Army. In no public office has there been such untiring effort as in the office of the Civil Service Commission on behalf of the Army during the past 18 years.

[2] "The Committee have come to the conclusion that five subjects, English, mathematics, a modern language, Latin, and experimental science, may be regarded as supplying a sound general education." — *Report of Military Education Committee, March, 1902, p. 4.*

The inclusion of science in the above list is a new departure, upsetting the hitherto accepted notion that subjects of general education are to be regarded as "vehicles" for the acquisition of technical knowledge.

[3] *Ibid.* Appendix A.

[4] Report of Head Masters' Conference, 22nd December, 1904.

but, great as this disturbance will be, the Public Schools will surely be the gainers by the necessity now imposed on them to examine their organisation, take stock of their methods, and reform their procedure to meet the altered demands made on their services.

The salient features of the new regulations are the introduction of a qualifying test of general education, either by means of the new system of "leaving certificates" or by qualifying examinations, the inclusion of Science in the list of subjects of general education, the reduction in the number of subjects, the establishment of English among the compulsory subjects, with large mark counting value, and the removal of Latin and Free-hand drawing from the compulsory to the optional list. As recommended by the Military Education Committee[1] there is to be the same examination for both Woolwich and Sandhurst. For the qualifying examination[2] there are two classes of subjects. Class I. contains three subjects (English, English history and geography, and elementary Mathematics), all of which must be taken. Class II. also contains three subjects (Science, French or German, and Latin or Greek), two only of which are to be taken. For the competitive examination for Woolwich there are three compulsory subjects (English, Mathematics I., and French or German) and five optional subjects (Mathematics II., History, German or French, Latin or Greek, and Science), only two of which may be taken. For the competitive examination for Sandhurst there are only two compulsory subjects (English and French or German), while there are six optional subjects, Mathematics I. being added to the list of five optional subjects of the Woolwich examination. Only two of the optional subjects may be taken. In addition to the above, candidates both for Woolwich and Sandhurst are allowed to take up Free-hand drawing, to which subject only 250 marks are allotted, all other subjects being of equal value with 2,000 marks each.

The new regulations suggest many points for discussion in regard to their bearing on the educational future; but it is only proposed to-day to bring forward one point—viz., the position of Latin, which by accident rather than by design has been elbowed out of the new examination curriculum. No Woolwich candidate will normally take up Latin as one of his two optional subjects in the qualifying examination when he has French or German and Science available for choice, the former subject being compulsory in the competitive examination, and the latter counting high for marks in the inside Academy curriculum. Similarly, in the competitive examination he is unlikely to reject Mathematics II. for Latin, which has no mark interest for him during his Woolwich career. By a somewhat different process of reasoning it can be shown that no Sandhurst candidate will normally choose Latin as one of his two optional subjects either in the qualifying or competitive examination. The result will be that Latin will drop automatically out of the curriculum

[1] Military Education Committee (1902) Report, p. 8.

[2] There is considerable difference in the final issue of the new Regulations, as drawn up by the Advisory Board, and approved by the Secretary of State for War, and the original proposed Regulations as drafted by the Military Education Committee.

of Army classes, a decided movement in this direction having already been reported by members of the Head Masters' Conference.[1]

This result is antagonistic to the intentions of the Military Education Committee, who had it in mind that Classics and Science should be alternative subjects of examination,[2] with a view to keeping the door into the Army open to both classical and non-classical candidates. The arrangement falls through in practice owing to the examination advantage which science has over classics, consequent on the latter being removed from the compulsory to the optional list of subjects. The matter has quite recently been brought before the War Office by the Committee of the Head Masters' Conference with a view to the new Regulations being amended so as to provide for the inclusion of Latin in the examination for qualifying certificates.[3]

Although the Army Council have given a negative reply to this representation, and have decided that a trial must be given to the new regulations, permission is asked to express the hope that this decision may be reconsidered. Education is the one subject which will not bear the test of spasmodic experiment. Irreparable harm to its cause may be done during the time the intended trial lasts. No departure from sound educational principles can be taken even for a limited period of time without leaving an abiding mark behind its path.[4] Apart from its commanding and humanising influence on the whole range of liberal education, Latin has a definite utilitarian purpose in relation to military education. The necessity for military officers acquiring the habit of accurate speech, and clear, concise, rapid expression of their minds on paper, when conveying orders to those under them, and when reporting to their superiors, was strongly brought to notice in the evidence given before the Military Educa-

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[1] Report of Head Masters' Conference, 1904. See evidence given by Dr. Rendall (Charterhouse), and the Rev. H. A. Dalton (Felsted).

[2] Military Education Committee (1902) Report, para. 21, p. 5 :—"The Committee have finally come to the conclusion that all candidates should be compelled to take up English, Mathematics, and a modern language, but that each candidate should be permitted to chose between Latin and Experimental Science."

[3] The following is the text of the resolution which was agreed to by the Conference of Head Masters, held at Christ's Hospital, West Horsham, on the 22nd and 23rd December, 1904 :—

"That this Conference hopes that the scheme for qualifying certificates in the examination for Woolwich and Sandhurst will be so amended as to encourage the study of Latin, and that the Committee be requested to make strong representations to the War Office on the subject."

[4] At the Lichterfelde Cadet School in Germany, Latin is a subject of study till the cadets leave the school as ensigns. In France, Latin is included in the examination programmes for non-classical (*séries scientifiques*) as well as classical (*séries littéraires*) degrees. Every candidate for admission to one of the French military schools, having to produce one of these degrees, has consequently a necessary knowledge of Latin.

tion Committee.[1] Latin is admittedly the best instrument of linguistic and literary discipline,[2] and its omission from the antecedent curriculum must strike a heavy blow at the education[3] of future generations of military officers.[4]

2. *Inside Examinations.*

A striking feature of all the foreign military schools is the system of continuous examination, which goes on *pari passu* with the teaching, the cadets being periodically interrogated regarding their work, the marks awarded for the interrogations being accumulated, and added to those given at the final examination on leaving the school. The interrogations supplement the lectures, and are a combination of teaching and examination. The interrogators, who in France and Belgium are styled *répétiteurs*, are assistants to the professors whose lectures they attend, and whose work they are at all times ready to take up. The *répétiteurs* have for their object not only to mark the work of their pupils, but to encourage their studies, and check any tendency to idleness.[5]

[1] "Officers when they join, very often are unable to write a satisfactory letter or to make a satisfactory report."—*Evidence given before the Military Education Committee by Field-Marshal the Earl Roberts, V.C., K.G., etc.* (*Q. 8434.*)

"Every officer in His Majesty's Service ought to be able to express himself clearly and correctly in his own language."—*Report of Military Education Committee, March, 1902.*

[2] "The marvellous grammatical system of Latin or of Greek coming to us in a foreign language arrests our attention, and makes teachers and scholars feel that it is something to be seriously studied." — "*The Education of the American citizen. By Dr. Hadley, President of Yale University.*

[3] "Without Latin there is no liberal education."—*Sir F. Pollock. "Pilot," 12th January, 1901.*

[4] "I look"—the quotation is from Sir George Clarke's evidence before Mr. Akers-Douglas's Committee—"upon the value of Latin not merely as helping to give one a power of literary expression, but as giving a grip on the structure and the grammar of a language, which probably you do not get in any other way; and lastly, as a great help to the learning of certain modern languages. I would therefore make general education consist of Latin and one modern language."—*Minutes of Evidence, Military Education Committee.* (*Q. 841.*)

[5] The system is described as under by Colonel Leman, director of studies, at the École Militaire at Brussels:—

"Les répétiteurs sont sous les ordres directs des professeurs dont ils sont les aides; ils remplacent les professeurs dans le service des leçons quand ces derniers sont absents ou malades. Les répétiteurs assistent à tous les voyages d'instruction.

"Il y a une interrogation après chaque leçon; elle porte en moyenne sur les trois dernières leçons; elle se fait dans des cabinets spéciaux; l'élève y est seul avec l'interrogateur et avec l'élève qui doit lui succéder.

"Les interrogations n'ont pas autant pour but de fournir des appréciations sur les élèves, que de les obliger à étudier leurs leçons au jour de jour, et de faire en sorte, par conséquent, qu'à chaque leçon le professeur ait devant lui un auditaire connaissant les matières antécédemment enseignées, donc un auditaire préparé à le comprendre.

The system has sometimes been tentatively tried by individual instructors at both Woolwich and Sandhurst, but has never been adopted in any form as a regular practice. When questioned before Lord Dufferin's Commission, Captain (now Colonel) Lonsdale Hale, who was at that time Instructor in Fortification at Sandhurst, described the system as being "very admirable,"[1] but stated that it had been tried and abandoned at the college owing to the personal objections of the instructors. The nature of the objections was not stated in the evidence given.

The outside examiner as he exists in the English military schools, is unknown abroad. The periodical examinations for class promotion at the foreign schools are conducted by the school staff, and in some schools, notably throughout Austria, the final examination also. Where there is an outside Board, as, for instance, at the École d'Application at Brussels, the members of the Board sit as judges for awarding marks, while the examinees are questioned before the Board by members of the teaching staff of the college.

Underlying the system as described above is the same principle, which is kept so much in view in the entrance examinations, viz.:—that the primary rôle of examination is to test education, and that the teacher can do this better than any outside authority.

"The examiner," said an Austrian officer in the course of conversation, "must either be the teacher or someone in close touch with him, working into his hands, and associating himself with the thoughts, ideas, and principles which he has sought to impress on his pupils. When it is suggested that the teacher cannot be trusted to examine, the answer is that if that is so, still less can he be trusted to teach. The object of examination is to test the pupil not the teacher, whose capacity for his position must be tried at other times, and by other means." These words are quoted as embodying the views not only of the Austrian schools, but of all those engaged in education work abroad.[2]

"Les répétiteurs sont spécialement chargés de l'exécution du service des travaux d'application écrits ou dessinés, en se conformant à l'instruction générale qui règle ces travaux, et aux instructions particulières, qui leur sont données par leurs professeurs."—*Extract from Memorandum prepared by Colonel G. Leman.*

[1] Minutes of Evidence. (Q. 2983-85.)—*Royal Commission on Military Education, 9th August, 1869.*

See also evidence given by Major-General W. C. E. Napier, Vice-President of the Council of Military Education. (Q.953-956.)

[2] With regard to this point, Sir Michael Foster, K.C.B., F.R.S., writes as follows:—

"The teacher is the proper examiner. On this I feel very strongly. He is the man who really knows the merits of those whom he teaches, and if he cannot be trusted for an opinion on this, he ought not to teach. Not only in the Army, but everywhere, we are being mentally deformed by the tyranny of our system of written examinations conducted by outside examiners. All teaching ought to be directed along its whole course by the teacher finding out, as he goes along, how his teaching is being taken in by his pupils, by means of oral and practical examinations frequently repeated. The present method of a final hurdle of written examination is an abomination. God made examinations for education; man is making education for examinations." — *Extract from a private letter.*

At Woolwich, where there is keen competition for commissions in the Royal Engineers, the newly adopted practice is for the chief instructor to allot one half of the marks in any given subject, and the outside examiner the other half. This is a compromise between the examination policy of the Civil Service Commissioners,[1] and of those who insist on the educational rôle of examination being kept uppermost in mind. It is for consideration whether the continuance of this compromise can be justified by the arguments which may possibly be brought to bear on the side of its defence.

3. *Methods of Examination.*

As in teaching, so in examination the oral test is largely used abroad, both for the entrance and inside examinations. In the competitive portion of the examination for admission to the École Polytechnique, no less than 78 per cent. of the marks are allotted for oral work. In nearly all the military schools the final examination which determines the classification of the cadets, is almost exclusively oral, it being considered important that the tone of the candidate when under examination, his readiness of speech, and nimbleness of mind, should be tested as well as the amount of theoretical knowledge which he has acquired.

In England, the oral system of examination has never been adopted by the Civil Service Commissioners, chiefly on account of the rigidity of the competitive principle, which mistrusts the ability of the examiners to differentiate between rival candidates by means of verbal questions and answers.

With regard to this point, opportunity was offered during the visit to Brussels, to be present on one occasion when the public oral examination of candidates for admission to the École Militaire was being conducted. There were three examiners present, one acting as president, the other two as interrogators. Each interrogator took the candidate in hand for a quarter of an hour, setting him a problem, requiring him to work it out on the black board, and questioning him during the progress of his work. Marks were given by all three examiners, the mean being taken as the official award. The publicity of the proceedings was a guarantee against any suspicion of partiality.

Though the oral method of examination makes large demands on the efforts of the examiner, its value as a means of testing capacity and knowledge is unquestionable. It brings the candidate face to face with the judges of his work, and is a better trial of mental nerve than the written method, necessary as the latter also is for testing the extent of the student's reading, and the depth and breadth of his thoughts.

PART IV.

CHARACTER.

"For the conduct of an Army, character weighs more than knowledge or science."—*Von Moltke.*

Character being admittedly the determining factor in war, any comparison between English and Continental methods of military

[1] "A great evil may be produced by forcing education out of its regular channels, and making public examination the test of education." — "*Times*," *29th November, 1904. Letter by Mr. W. J. Courthope, C.B.*

education must take into consideration the effect which such methods have on character as well as on training. In England, it has always been a matter of confident opinion that our public school system is superior to the Continental state controlled schools, for the purpose of forming the early character of boys intended for the Army; and although this confidence was somewhat shaken on the publication of the Report of the Military Education Committee (1902) the faith of the country in its public schools was not wholly withdrawn, what was found defective by the Committee not being so much the character as the antecedent training of young military officers. The tone of public criticism at the time, perhaps, indicated how little understood was the connection between character and training, the formation of the former, during, what Mr. Thring used to call, "those mighty ten years between 10 and 20," in reality, almost wholly depending on the efficiency of the latter; but passing this by for the moment, what is certain is, that the raw material of which British officers are formed, is as good as ever it was,[1] and what is equally certain is, that the antecedent training given by the public schools has failed to mould this material into the best shape possible for its subsequent technical training.[2]

One of the chief means used by the public school masters for the formation of their boys' characters is the organisation of outdoor games, which are believed to be specially valuable for promoting qualities of energy, manliness, temper, and leadership.[3] So strongly has this side of public school life been developed in recent years that greater prestige is attached to boys who show capacity for games than to those who are successful scholars. In one of the most distinguished of our public schools there has been in existence since 1811, a society, which was originally constituted among the elder boys of the school for purposes of literary debate—the original members were called *literati*—but which is now composed almost exclusively of those who are specially prominent at outdoor games. What constitutes the aristocracy of all schools are those boys who are first not in learning, but at games. This prestige sets the fashion of the school life, is shared by masters, parents, and pupils alike, and has of late years exerted a decisive influence on the tone, spirit, and curriculum of the preparatory secondary schools throughout the country.

In all the preparatory schools which train boys for the Public Schools immense pains are now taken to organise outdoor games with a view to the future success of the boys when they join their

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[1] The British officer is the finest material in the world, and it is the fault of his training, not of himself, if he is not perfect.—*Field-Marshal Viscount Wolseley, K.P., G.C.B., O.M., etc.*

[2] Report of the Military Education Committee (1902), para. 9.

[3] "It is the spirit that loves games, and is in turn fostered by them, that has made England a dominant nation.—"*Games in Preparatory Schools.*" *By A. J. C. Dowding, formerly head-master of St. Ninian's, Moffatt, N.B. Special Reports (Board of Education). Vol. 6.*

The above is the kind of *ex cathedrâ* assertion (made without any appeal to evidence) which may be said to represent the prevalent public opinion of the country at the present time in regard to the value of games in national life.

Public School. Compulsory attendance at games is rigidly required, strict discipline is maintained, and the methods of each game are systematically taught. At many schools a master is detailed for "field duty," while masters who are off duty, and not otherwise employed, are expected to be present to assist in coaching the boys. Catching up the spirit of the day, and wishing their sons to gain future distinction in that branch of Public School life, which is held in the highest repute, parents select schools which offer the best facilities in games.[1] There are preparatory schools where as many as 17 to 20 hours a week are devoted to compulsory cricket and 11 to 15 hours a week to compulsory football.[2] The principle of compulsion is everywhere enforced.

There is no doubt that at the early age at which boys go to preparatory schools organisation of their leisure time is as necessary as the organisation of their working hours. Direction is required; but there is an undercurrent feeling of doubt which occasionally rises to the surface[3] as to whether the particular form which this

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[1] The following is by no means a solitary testimony to the truth of this statement:—

"An acquaintance of mine had recommended to a parent a preparatory school of all-round excellence. Some months later he received a call from him and was informed that a change of school was contemplated. He expressed surprise, and hoped there had been no serious fault found with the school. 'No, no,' was the reply, 'the school is all that it should be; but I don't approve of the style of the new cricket master's coaching.'" — "*Special Reports on Educational Subjects.*" *Vol. 6, p. 358. Board of Education. (Extract from report contributed by Mr. A. J. C. Dowding, formerly head-master of St. Ninian's, Moffat, N.B.*

[2] Board of Education.—"*Special Reports on Educational Subjects,*" *Vol. 6, p. 368.*

[3] "There remains the question, whether the pains and skill with which these games are organised and taught do not serve to place them on too high a level in the estimation of the boys, and thus substitute an athletic supremacy for the old sovereignty of the class-room"—"*Special Reports on Educational Subjects.*" *Vol. 6, p. 346.—Board of Education.*

Referring to Mr. Arnold-Forster's speech at the London University on the 16th January last, the head-master of the King's School, Ely, wrote as follows to the *Daily Mail*:—

"As long as the cult of athletics holds the premier place in our educational system, and as long as we magnify life's amusements, while we minimise weightier matters, just so long shall we look in vain for any real advance in our public schools or in our Army. Both should be great national assets; but independence of judgment, clearness of vision, and high seriousness are the requisite factors for achieving noble success. Purposeful action can be won only by intellectual effort. All this may be the heresy of to-day; but it will have to become the orthodoxy of to-morrow if England is to keep her place among the nations." *Daily Mail," 27th January, 1905.*

The following question was put in the year 1900 to 101 preparatory schools:—"Whether athletic interests are stimulated to an unnecessary degree at the public schools and universities." Of the answers received, 59 were "Yes"; 42 "No."

direction has more and more taken during the past quarter of a century does not tend to exaggerate the part which amusement ought to have in the life of an English boy. What are the motives—this is the kind of question which is being asked—which are at the bottom of the time and pains taken in organising outdoor games? Is the purpose of the organisation solely to develop the physical energy, bodily endurance, and simplicity of life of the boys who come under its jurisdiction? *Mens sana in corpore sano.*[1] Does this sentence of the Roman satirist represent the full measure of the master's intentions in regard to the outdoor training of the boys who are trusted to his care? If it does not, and if other motives lurk behind his professions—the desire, for instance, to gratify the parent's wish for his son to be popular, or for the individual or school to excel over others—then does not this indicate a surrender of the highest functions of the teacher, and does not this conception of training fall below that of the great Greek protagonist,[2] who, writing nearly 2,500 years ago, urged the young nobles of Athens to submit themselves to a severe course of physical training, not for purposes of pastime or amusement, or for their individual glorification at the Olympian festivals, but as a necessary inceptive and disciplinary step towards training their minds for their duties as the warrior guardians of the State?

The suggestion, which here forces itself on the mind, is the possibility of making use of the outdoor organisation, which exists in the Public and Preparatory Schools, for the purposes of a severer and more utilitarian training than is now the custom. While a reasonable amount of amusement should be allowed to enter into every English boy's life, could it not be possible to divert a portion of the enormous flow of physical energy into more productive channels than are supplied by pure game-playing? The principle of compulsion is already applied to amusement. Why should not this principle be extended so as to include elementary instruction in practical military exercises and rifle shooting? A lead in this direction has lately

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[1] Juvenal, "Satires" X.

[2] Plato, "Republic," Book III.

"Plato affirms that music (culture) and gymnastics are not, as common opinion is apt to imagine, intended, the one for the cultivation of the mind and the other of the body, but that they are both equally designed for the cultivation of the mind. The body, in his view, is the servant of the mind; the subjection of the lower to the higher is for the advantage of both."—"*The Dialogues of Plato.*" *Jowett. Volume III.*

The same view was upheld by those Roman writers who discountenanced the waste of time caused by the gladiatorial shows during the Empire. Writing in the reign of the Emperor Trajan to the historian Tacitus, the younger Pliny excused himself for going out hunting, by pointing out how necessary exercise is, not for amusement, but in order to give scope to the faculties of the mind:—"Ridebis, et licet rideas; sed non est quod contemnas hoc studendi genus. Mirum est ut animus agitatione motuque corporis excitetur."—*Pliny's letters.*

been given by the highest military authority in the country.[1] Such a lead prepares the way for collective action by the Public Schools. The matter has been under the consideration of the Head Masters' Conference since 1900, and at the annual meeting held at Christ's Hospital last December the following resolution was passed:—

> "That it is desirable for the Committee to consider the desirability and feasibility of making training in the use of arms compulsory on boys in the Public Schools, and making common cause for the promotion of that object."[2]

Any practical outcome of this resolution will surely receive the sympathetic support of the military profession; but in this, as in other matters involving a new departure of principle, the country is governed by public opinion, and until the resolutions passed by the Head Masters take a more practical and collective shape than has hitherto been the case, the War Office cannot be expected to regard them as a serious contribution to the problem of Imperial defence.

Here, as a matter of comparison, it is interesting to note what is being done on the Continent in the way of athletic training for forming military character. It may be said that games, as young Englishmen play them, are unknown abroad, no value apparently being set on them as a means of war training. In Germany the arguments of the English schoolmasters are well known, but have never carried any weight among the leaders of thought in that country. Our national love of sport, apart from athletic training, seems to meet with no response. In his celebrated Royal Decree on Secondary Education, issued in 1900, the German Emperor urged that more time should be given to physical exercises in order to lessen the weight of mental pressure, but His Majesty's instructions made no suggestion for introducing amusements into the recreation hours. "Our boyhood," said a young German officer in the course of conversation, "is harder, stricter, duller than that of English

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[1] I maintain that it is the bounden duty of the State to see that every able-bodied man in this country, no matter to what grade of society he may belong, undergoes some kind of military training in his youth sufficient to enable him to shoot straight and carry out simple orders if ever his services are required for the national defence."—"*The Army: As it was, and as it is.*" *By Field-Marshal the Earl Roberts, V.C., K.G., etc.*, "*Nineteenth Century and After*," *January, 1905.*

Following on the same lines, Major-General Baden-Powell, C.B., has lately advocated the utilisation of boys' cricket clubs for the purpose of military instruction in drill and rifle shooting:—"I urge seizing upon the enthusiastic spirit that exists among our boys and young men, and directing it in the right line, so that at least the rising generation may be imbued with the true patriotic feeling."

[2] Report of Head Masters' Conference, 1904.

The above resolution is less decided than the following, which was voted by 82 out of 93 head-masters in February, 1900, when the war feeling was at its height:—

"As a step in the organisation of national defence, it is desirable that all persons *in statu pupillari* at the universities and public schools, above 15 years of age, and capable of bearing arms, should be enrolled for the purpose of instruction in drill, manœuvre, and the use of arms."

boys. There is little done to brighten it. Amusement is hardly allowed to enter into our life at all." From a military point of view this austere system of education produces undeniable results. Brought up in this harsh and unsympathetic school the young German officer is a model of virile strength, and acquires by sheer force of severe training those moral and physical characteristics which make for belligerent superiority. After 35 years of peace there is as yet no sign of decadence, and the German officer of to-day is as hard, strong, and capable[1] as his father who fought in the campaign of 1870.

Although the young foreign cadet is not encouraged to play games, it must not be supposed that he is allowed to become a bookworm. Not only in Germany, but in Austria and France also, a great deal of time is given up to gymnastics, fencing, riding, and swimming. Young French and Austrian officers are not hunting men, but many of them are as fearless cross-country riders as young English officers. What it is important to note in comparing English with Continental methods of military training is that no interest is officially taken abroad in any form of athletic exercise, which is not utilitarian in its military object, and which does not contribute to professional excellence.

It may be further stated in connection with the question of outdoor training that great value is now attached in France to physical efficiency, candidates for admission to the École Polytechnique, and to Saint-Cyr, having to undergo an examination in gymnastics, fencing, and riding—failure to pass which excludes them from admission even if otherwise qualified.

The improved training of the French Army during recent years has had a visible effect on the character of the present generation of officers. Gifted naturally with the same energy and genius for organisation as their fathers, they have learnt by force of training to be serious, observant, thoughtful students of their profession. Both their antecedent theoretical education and their subsequent practical training are carried out on carefully considered principles, to the study of which the best intellect of the nation has been brought to bear. It is not possible to go among young French officers of the present day without perceiving their altered character as compared with their predecessors who filled the ranks of the Army during the time of the Second Empire. The exaggeration of manner, which marked the men of those days, has disappeared, and has been replaced by a tone of quiet but conscious strength. The lessons of defeat were never better taken to heart than they have been by the French Army during the past 30 years of laborious work of preparation for national defence.

Returning in conclusion to the case of the Public Schools, the question remains for consideration whether, as at present constituted,

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[1] "The Prussian officer," writes an Englishman who has lived for 13 years in Berlin (Mr. George Saunders, *Times* Correspondent), "is body and soul identified with his profession—willingly if he has a natural enthusiasm for it, forcibly if he has not. He is made to treat his profession as if it were banking or manufacturing, and whether he likes it or not has to work at it with all his might."

they are effective agents of education in view of the increasing demands of the military service. In his speech on the 16th of January last at the London University[1] the Secretary of State for War pressed home the charge of inefficiency, and challenged the schools to reform. The reply of the Head Masters to this challenge was that the fault was not with the schools, but with the curriculum of examination, which had received the acquiescence of the War Office, and in regard to which the schools had satisfied the Civil Service Commissioners. The counter reply of Mr. Akers-Douglas's Committee is that if the choice of subjects was bad, the teaching of them was worse. The evidence given before that Committee brought to light the imperfect grounding which the young men who entered the Army had received in elementary subjects of education—English, spelling, writing, and arithmetic.[2] Boys were allowed to pass on to the study of advanced subjects, which counted high for marks, without having undergone the necessary drudgery of elementary preparation. In the wish to satisfy mark hunger systematic training was ignored.

A new syllabus has been drawn up for entrance into the Army, but, in the opinion of those who are most qualified to judge, a change of syllabus will be of no avail without a change of system.[3] What seems to be required is the organisation of work on the same lines as the organisation of amusement. It is beyond the scope of this paper to discuss the nature of the reforms which are necessary if the Public Schools are to continue to be preparatory schools for the Army; but it may be permitted to indicate one change which must occur to all who are acquainted with foreign methods of education, viz., an increase in the number of masters. At the cadet school at Gross-Lichterfelde with a maximum of 1,000 cadets there are 97 professors and teachers. At the West Point Academy there are 80 professors and only 400 cadets. Taking Eton as the largest of our Public Schools, there are only 58 masters and between 1,000 and 1,100 boys. With classes of 30, backward boys get lost in the crowd, and their education suffers. Other changes have been suggested in the Board of Education reports,[4] but what is perhaps required above

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[1] "He hoped the public schools were not going to fail us. He was not satisfied from the information which reached him that those candidates who came to the Army from the public schools had that ordinary average of education which a cultivated English gentleman at that period of his life ought to possess.—"*Times*," *17th January, 1905.*

[2] "The Committee have received evidence that some of those who have proved their mathematical ability by succeeding in the competition for Woolwich have, after admission into the Academy, been found deficient in fundamental knowledge, and in those habits of accuracy which are acquired by a thorough training in elementary mathematical processes."—*Report of Military Education Committee, March, 1902.*

[3] "Unless this change comes quickly it is to be feared that the intellectual lead will pass from the great public schools to another type of school altogether."—"*Special Reports: Board of Education.*" *Vol. 9, p. 10.*

[4] *Ibid.*

everything else is to re-adjust the equilibrium between Body [1] and Brain [2] by the creation of a healthy public opinion which will make intellectual ambition the predominant partner of the schoolboy's life, while it equally recognises the value of a severe system of athletic training, not as the goal of effort, but as the ladder to success.

It was in this sense that Mr. Arnold-Forster's speech echoed the growing opinion of the Army. Proud as we are of our Public Schools, of their corporate life, of their freedom from officialdom, of their independence of status, of their unlimited capacity for influence, reflecting as they do much of what is best in our national character, it would indeed be deplorable if, by holding back from the calls made on their services, they were to cease to be available for purposes of antecedent military training. The military colleges have not been backward in reform. During the past three years their organisation as well as their curriculum have been re-constituted on what are believed to be the most up-to-date principles. Is it too much to hope that the Public Schools will follow the lead given by Sandhurst and Woolwich, and bring their own organisation into line with the educational efforts of the military authorities? The saying of the Duke of Wellington is often repeated—that the battle of Waterloo was won on the playing-fields of Eton. What was true in the days of shock tactics is no longer applicable now. As your Lordship has lately pointed out, the Army as it is widely differs from the Army as it was.[3] "The school of arms is now the most exacting of professions." Something more is required than the training which those glorious heroes of Waterloo received at the Eton of bygone days. If the Head Masters will recognise this fact, and with the strong hand of true reformers adapt their methods to meet the altered conditions of the military service, then the warning of the Secretary of State will have served its purpose, and the Public Schools of England with increased prestige and with a renewed lease of confidence will remain for all time the recruiting ground of the Army.

Major-General H. D. HUTCHINSON, C.S.I., I.A. (Director of Staff Duties): — I am sure we have all listened with great interest to the admirable lecture which Colonel Murray has given us. He has been, as most of you know, for several years Assistant Commandant at the Royal Military Academy at Woolwich, where he has taken a most active and responsible share in developing the present excellent educational

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[1] "Quant aux sports masculins, ils sont en effet répandus et développés à l'excès. La guerre du Transvaal vient d'illustrer ce fait d'une façon mortifiante pour nos voisins. Leur exemple démontre combien il est périlleux de glorifier outre mesure les muscles dans l'éducation. Le muscle est, et doit rester, l'humble serviteur de la tête."—"*Le Temps*," *7th March, 1901. M. Marcel Prévost.*

[2] "Brains are even more important in war than numbers."—*Minutes of evidence, Royal Commission on the War in South Africa. (Q. 10477). Field-Marshal the Right Hon. Earl Roberts, V.C., K.G., etc.*

[3] "The Army: As it was, and as it is."—"*Nineteenth Century, and After*," *January, 1905.*

"A terrible lesson awaits the nation whose soldiers find themselves opposed to equally brave but better trained opponents on the field of battle."—*Field-Marshal the Earl Roberts, V.C., K.G., etc.*

system, and he is therefore an expert on the subjects on which he has discoursed to us, and entitled to speak with great authority. During the tour which he has recently made of the best Continental military schools, in company with Professor Foord-Kelcey, it is evident that he has made the best use of the opportunities afforded to him, and I am sure we are very much indebted to him for giving us this afternoon the interesting results of his observations. I am not, however, prepared to say that I quite agree with him in everything he has said. For instance, in the matter of examinations, I gather that he is in favour of examinations being conducted not by outside examiners, but by the actual instructors. I am not convinced that this would be right. The teachers no doubt know fairly accurately the capabilities of each pupil, but it is conceivable that teachers have their likes and dislikes, and on the whole, I believe our system of independent examinations by outside examiners is more satisfactory, and the results generally obtained by this method have not been disappointing. Again, in the matter of out-door games and sports, as practised in our schools, Colonel Murray makes a comparison with Continental methods, which is not in our favour. He is distinctly down on the "flannelled fools at the wicket and the muddied oaf in goal." No doubt these things can be overdone; but although he assures us that after 35 years of peace the German officer of to-day is as virile and hardy as his father was in 1870, yet I am convinced that in this respect, at all events, the British regimental officer can well hold his own with any Continental officer, and I do not think the national predilection for cricket and football will ever do him much harm. In regard to the principles of education as applied to candidates for admission to the Army, I am in full accord with Colonel Murray; but if we in England have been tardy in recognising the fact, I think we have recognised it now, that a sound general education must precede, and be the foundation of, any technical education, and all the trend of our recent legislation in these matters has been to ensure a thorough grounding in the usual subjects included in a general curriculum before there is any attempt at specialisation for a military career. There can, of course, be no question of the soundness of this principle, and a steady adherence to it must have good results. In regard to the system of teaching at the Military Colleges, Colonel Murray has told us how the "oral system" is valued on the Continent and at West Point (under the name of "recitations"). Undoubtedly it gives a student confidence to accustom him to stand up and speak himself. He learns in this way that it is one matter to understand a thing himself, but quite another matter to be able to explain it lucidly to someone else, *e.g.*, to a squad of recruits. Yet, as he must in his turn be an instructor of his men (and, as he rises in the Service, an instructor of junior officers), it is very desirable that he should learn himself in such a way that he may be able to impart his knowledge to others. In our military colleges we have not perhaps considered the oral method of instruction and examination quite so carefully and systematically as it deserves; but it is not lost sight of altogether. I have myself been an instructor for a good many years, and I always used to impress upon my pupils that a safe test of what they knew themselves was their ability, or otherwise, to impart what they knew to someone else; and I find this is pretty generally done by all instructors. I think after what Colonel Murray has told us, we shall all pay more attention to oral instruction. While on the subject of instruction, I should like to allude very briefly to the system recently instituted at Woolwich and at Sandhurst, by which the company com-

manders and company officers are also the instructors of the cadets in all military subjects. This system is really in its infancy, and its working and results are being carefully watched. Theoretically it is of course unassailable; but in practice it must be admitted that there may be weak points in it. I do not say that by exercising very great care these weak points cannot be eliminated; but it is not by any means easy to find officers who combine all the military virtues of first-rate regimental officers and disciplinarians, with the technical acquirements and professional knowledge which make up a first-rate lecturer. Still, we are steadily working in that direction, and we are doing what we can to draw the best men to these educational appointments, which are in fact of the highest importance, but which do not attract everybody. I am afraid I have already trespassed too long upon your patience, therefore I will only say one thing more, and that is, that whatever may be our methods and systems, the one thing that is essential is that there should be continuity about them. Nothing is so unsettling, so harmful, and so mischievous as frequent change. It gives no one a fair chance. Yet it is impossible to avoid the charge that in reference to Sandhurst our changes are frequent. We have sometimes a two years' course for cadets, sometimes twelve months, and sometimes eighteen months. This is solely because the Royal Military College is altogether too small for our requirements. The number of cadets which it accommodates, and consequently its annual output, is inadequate to the needs of the Army; and in consequence, as soon as it becomes evident that we want more officers we have to reduce the period of residence in order to increase the output. Everyone recognises that this is a misfortune. It is hard on the Commandant and the teaching staff; it is unfair to the cadets themselves; and it is detrimental to the best interests of the Army. But the obvious remedy, which is to enlarge Sandhurst, to increase the accommodation it affords, and to make it a great military institution worthy of a great military nation, means money, and the money, unfortunately, is very difficult to find.

Brevet Colonel F. J. DAVIES, Grenadier Guards (Assistant Director of Military Operations): — In the course of the very interesting lecture we have heard, the lecturer described in great detail and very clearly one of the methods by which officers enter the German Army. He described the cadet schools, and it must have been clear to those who followed the lecture that these cadet schools do not entirely take the place of Sandhurst and Woolwich in our institutions; in fact, what they do is this: they are public schools provided by the State and controlled by the State, which provide that education which on our system we get at the public schools before we go to Woolwich or Sandhurst. It must not be thought that this is the only means by which officers enter the German Army. On the contrary, I have not had time to look up any facts before coming here—I only decided to speak a few minutes ago—but I think I am right in saying that the majority of officers who enter the German Army do not go through the cadet schools; I have been told that two-thirds do not.[1] I should like to say a few words on the other system which is in force in that country by which officers enter the Army. It is obvious that if only those who enter the cadet schools were allowed to become officers, a great

[1] I have since ascertained that this is correct. I have also ascertained that those who enter as *fahnenjunker* are considered by many to have a superior general education to those who enter as cadets.—F. J. D.

many people would be prevented from doing so, because a lad goes to the cadet schools very young. Those who at the age of seventeen or eighteen or later decide to adopt a military career must enter in a different manner. A young man, either himself or presumably through his parent or guardian, approaches the colonel of the regiment he wishes to join; the colonel makes enquiries as to his social position and general suitability. He has to produce certificates of having passed certain examinations—not in military subjects, naturally. The Colonel then can accept him, if he wishes, as what used to be called an *avantageur* or *offizier-aspirant*, but which is now, I believe, called *fahnenjunker*. He enters the regiment as a private soldier; he sleeps for the first few weeks, I do not know how many, with the men in the barrack-room, but afterwards he has his own room. He very shortly gets promoted to the rank of corporal, and eventually to that of a non-commissioned officer, and having passed his examination to the rank of *fähnrich*—what is known as ensign—he goes to the War School. You will observe that the whole of this time is devoted to training in the regiment in which he intends to serve. Then, after passing through the War School, he eventually passes his officer's examination and becomes an officer; but before he becomes an officer he must pass a third examination which I have not yet mentioned. That third examination is carried on every day of his life while he is serving in the regiment as private, as corporal, as non-commissioned officer, or as ensign, and that examination is conducted with a view to seeing if he is a fit and proper person to hold the King's commission as an officer. For this purpose, although he is a private soldier, he dines at the officers' mess, although he is wearing a private soldier's coat. It is nothing at all extraordinary there to see a private soldier dining with the officers at their mess. He dines at their mess and associates with the officers in order that they may see what manner of man he is. At the end of his time the officers are called upon to vote whether or no that gentleman is a fit and proper person to hold the King's commission, and if they say "No," although he may have passed all the examinations in the world, although he may know more of strategy than Moltke and more of fortifications than Cohorn or Vauban, he will never become an officer.

Mr. A. A. Somerville, Eton College:—Dr. Warre, of Eton, is unfortunately unable to attend the lecture, but he wished me to say a word on behalf of the public schools. The lecturer has quoted a passage from Mr. Akers-Douglas's Committee's report, but I regret that he did not go on to read the succeeding passages, in which the Committee attributes the poorness of the results in many cases to the tyranny of examination, and in particular to the extraordinarily large number of subjects required in the examinations. The number for Woolwich, exclusive of geometrical and freehand drawing, is eight, and for Sandhurst seven. If anyone, like myself, who has been engaged in preparing boys for the Army for the past twenty years, can assure us that it is possible to teach boys of seventeen and eighteen seven and eight subjects and thoroughly ground them in each subject, he must be a phenomenal teacher. I am one of those who think that the curriculum now proposed will produce good results, and I think that the Military Education Committee in framing that curriculum, or rather in framing a curriculum which forms the basis of the one which is now coming into operation, has done great service for education in this country, because it has laid down the principle that we should not teach so many subjects at once, in order

that we should teach more thoroughly. The lecturer expressed a fear that Latin would drop out altogether. I think that is possible in the newer schools, but in the older schools, such as Eton and Winchester, I think Latin will be maintained. We have something more than 100 boys in our Army class at Eton, and we intend to retain Latin, for the very good reason that they have done Latin for some years, and we should give up a very valuable asset if we neglected it. It is even possible that the Woolwich candidates will keep Latin. A large number of the Woolwich candidates, I think, will take in their competitive examination English, French, Mathematics, Latin, and Science, which I think is a good combination. I was glad to hear the lecturer express approval of the oral method, because I think in the future very considerable results may be obtained from that method. With regard to what the lecturer has said on the subject of games, it is true that a very large amount of attention is given at the present day to games; but, after all, the people who decide how much attention shall be given to any subject in a boy's education are the parents, and the parents throughout the country insist that a very large amount of attention shall be given to games. We schoolmasters value games because they give the boys exercise, they harden them, and also because they are a most valuable means of training character. It is largely through games that boys develop the governing faculty, and the faculty of governing is one of the most valuable that you can have in a British officer. The lecturer alluded to another point in connection with Eton, namely, the small number of masters in comparison with the size of the school. It is quite true that if you look at the time table of the school you will see that the classes are rather large: but that is rather misleading, because we have in addition a system of small private tuition classes, in which boys receive some of their most valuable instruction. I should like to say, in conclusion, that, as one who has prepared boys for the Army, I look forward to the new curriculum which has been laid down by the Military Education Committee with much hope. I think it will give us an opportunity of educating the boys by allowing us to teach them their subjects thoroughly.

Colonel R. H. JELF, C.M.G., late R.E.:—Having had the honour to be one of the members of the Education Committee, which has been spoken of rather frequently to-day by the lecturer, and having had also the honour of being the last Governor of Woolwich, I hope I may be allowed to say a very few words. It is a great satisfaction to hear from my old friend and colleague, Colonel Murray, that he considers, after visiting these schools on the Continent, that we are certainly abreast, if not ahead, of other countries in the present condition of our education. We certainly have, as regards Woolwich, done our very utmost, under your Lordship's direction in the first place as our President, to introduce all the latest methods that we could ascertain, either from reading the evidence of past Commissions of Enquiries, or from investigations that have been made on the Continent and in America. We have introduced the system of teaching boys to teach one another, knowing that it was your Lordship's wish, when you were Commander-in-Chief, that it should be one of the greatest points to aim at, that the British officer should be able to teach his men as well as to lead them, and we tried to make that the foundation of our teaching at the Academy. I wish Colonel Kitson had been present, as I am certain he would have told us that the same system is what they have been working hard at also at Sandhurst. I

am convinced that that will be the means by which we shall lead young officers to take a greater interest in their work—if they themselves know how to teach others. With reference to the great question about uniting discipline and instruction, Colonel Murray and I during our time together saw absolutely eye to eye, and I do hope and believe it will be found that the system is going to be a complete success. I quite understand from what General Hutchinson has said that there are considerable difficulties, more particularly with reference to the higher and severer studies; but I believe that this will be met by keeping the senior professors out of the company system, and by using them to instruct the higher classes, and to supervise the teaching of the younger instructors, the captains, and subalterns, who are the company commanders. With regard to the civilian professors, I should like to endorse what has been said (although perhaps this is not the time to make a great point on the subject), that if we wish to have good civilian professors, be they professors of mathematics or be they professors of modern languages, to have the very best, it does seem very hard that there should not be some system of providing for these gentlemen in their old age, when they have done good work for the Army. Some system of pension, as recommended by Mr. Akers-Douglas's Committee, should certainly be established. With reference to the other instructors, that is to say, the officers, I hope and believe that more is being done than has been done in the past to obtain the very best officers to accept these situations. It is a notorious fact that a very few years ago it was very difficult to get leading men to take them up. To take an educational appointment was looked upon as a step backwards, and that fact was brought most clearly before Mr. Aker-Douglas's Committee. During the short time I had the honour of being the head of the Academy, with your Lordship's sanction I did my best to dissipate that notion. I tried in every selection that I made, and recommended to your Lordship, or to your successors at the War Office, to get the very best men that it was possible to get, and I assured them, as, I believe, I was authorised to assure them, that it certainly would not be a mark against them, but a mark very greatly in their favour if they did well. I am delighted to hear from General Hutchinson that that intention is being carried on. They are doing, he assures us, their very best to get the best men as instructors at Woolwich and Sandhurst, whether they call them instructors or whether they call them company officers. I will not detain you any longer, except to draw attention to one remark that I saw on Saturday evening in the papers, and I daresay others have seen it. It was to the effect that Captain Klado had been obliged, in Russia, to give up all his other emoluments and positions *except that of professor at the Military Academy.* That sounded to me rather sinister. The lecturer has not been able to tell us the condition of the Russian educational system, but I think we may all feel satisfied that no such decision as that could ever have found a place in the Japanese Army.

Colonel E. A. Altham, C.B., C.M.G., late A.Q.M.G. (Intelligence) Head Quarters:—The education of the British officer seems to me to fall, if I may venture to say so, under three heads: first, the general; second, the practical; and third, the technical. I am not quite sure that the lecturer has differentiated between the first head and the two last. He fell very foul indeed of our public school system in England. I venture to remind the meeting that although the Army draws largely on the public schools, yet the public schools have other duties besides that

of educating young gentlemen for the profession of arms; and I do not think it is quite fair to test the general results achieved by the public schools in this country purely by what we draw from them in the Army. I do not say whose fault it is, but I am afraid we must candidly admit that we do not get in the Army the pick of the brains of the public schools; and I think if we wish to test the public schools we must look generally at all the allied professions. We must look at the Bar, at the Church, at Parliament, at the Cabinet even, and I think if we took the outcome of them all round we should find the public schools have a very good record indeed to show. The fact of the matter is that if the Army wishes to draw the pick of the public schools we must bait our hook a little better than it is at the present day. Nor do I think it is fair to the public schools to say that they are unwilling to play up to the Army authorities in the way of meeting the demands of the Army half-way. Mr. Somerville, the head of the Army class at Eton, has told us what has been done at Eton, and if I understand aright, at other public schools, every effort is being made to meet the needs of the Army, and especially in the direction the lecturer pointed out, that of military training and teaching the boys how to shoot. I noticed, for instance, at the Public Schools Field Day, which was held two or three weeks ago at Aldershot, 50 per cent. of the whole of the Winchester boys turned out for that day—50 per cent. of the whole school, not 50 per cent. of the rifle corps. I think that is a very good record indeed. At another public school, Repton, shooting has been made compulsory, and it seems to me that a very little more encouragement in that direction would lead to the result that throughout England all the boys of the public schools would be given that elementary training in drill and in the handling of the rifle which we should like to see every Englishman throughout the country enjoy. Nor do I think it is quite fair, as Colonel Davies has already pointed out, to suggest that in other countries the officers of the Army are given their general education at special schools. In Germany we have been told it is not so; I believe I am right in saying that in Japan, a country to which I think we shall during the next few years look more closely and examine more minutely their system of military education, I believe they have adopted the German system, and a very large proportion of their officers are drawn from what corresponds to our public schools. The main object, I take, we desire to fulfil is that every candidate for His Majesty's commission should receive a good sound general education which would fit him for any profession, whether it is the Army or the Bar; and it is of great advantage to the State and to the Army that the boys who are going into the various professions should mix with each other, rub shoulders with each other, and not become a professional class or caste before their time. Passing on from the public school stage, we then come to the stage of professional education. I have already suggested that that should be regarded from two points of view: the practical education of the officer and his technical education. I take it we are all agreed that in practical education the real school is the regiment, and not the Royal Military Academy or the Staff College. The real elementary school, the school where the officer should get his sound elementary training, is in his regiment and by his own officers; and if that is so, I would venture to suggest that that elementary training in the practical duties of his profession would come better before the technical training. I do not quite know the details of the present curriculum at Sandhurst; but thirty years ago a boy went there who was perhaps brought up in some quite country place and was taught the tactics of the three arms; they tried to

teach him how to deploy a brigade and post a battery, and how a regiment of cavalry should be handled, when he had never even seen a battery in his life, and had never seen a cavalry regiment, and as for an infantry brigade, the most he had seen was a Militia company. I do not think that was quite sound; it was rather like trying to teach a child to run before he could walk. I venture to submit it would be a great advantage if a boy on being selected for the honour of His Majesty's commission could be given a course of elementary training in the practical duties of soldiering, first with the regiment, and then go to Sandhurst or the Military Academy to complete his technical knowledge. The "Britannia" and the "Osborne" are more or less general training schools; then the midshipman is sent to sea for three years to be given a practical training, and lastly he goes to Greenwich and to Portsmouth to be given his technical training. General, practical, technical, that is the order they adopt in the Navy, and the result is the admirably efficient officer in the sister Service whom we all so much admire. I think it would be possible to have some system of that kind in the Army, and therefore I venture to bring it forward this afternoon.

Mr. P. J. HARTOG, London University:—What was intended as an indictment of the Army has turned into an indictment of the public schools, in the hands of Mr. Akers-Douglas's Committee and in the hands of other persons. From that indictment the last speaker has tried to relieve the public schools, but I am afraid he has hardly succeeded. He points to the Universities, to the Bar, and to the learned professions as examples of what the public schools can do. It is some years ago since a distinguished foreigner said to Matthew Arnold: "Your universities in England are not universities in our Continental sense, they are merely higher secondary schools"; and what was true twenty or thirty years ago is true, perhaps not to so great an extent, but still to a very considerable extent, at the present day. The teaching in the earlier years at our universities is still very largely secondary teaching, and supplements the imperfect teaching of our schools. But we must distinguish. In education there are two elements which the French distinguish by two words: moral education, which they call *éducation*, and intellectual education, which they call *instruction*. I do not think that the foreign schools have much to teach us from the point of view of character-training, but our foreign critics are universally agreed that the instruction in our secondary schools is inferior to that given on the Continent. There is one other fact, I think, that is very significant in this connection. There is one large body of men who have not been trained in the public schools, at any rate not beyond the age of fifteen, and that particular body has come to be universally regarded, take them man for man, as perhaps the most efficient in the country. I mean our corps of naval officers. That is, perhaps, an even severer indictment of our public schools than the report of Mr. Akers-Douglas's Committee. The very able paper to which we have listened has taken us over so wide a field that I am sure it must suggest to everyone interested in education a vast number of points for discussion. I propose, however, to deal only with one, which I think, however, is one of the most important to consider. In every report on the education of officers in the Army it is stated that the officer in the Army cannot write his own language. How many mistakes have been made in warfare owing to confused directions one hardly dares imagine, when one reads the statements that were made before Mr. Akers-Douglas's Committee. As a remedy for that Colonel Murray has suggested that we

should in all our courses retain Latin. All I can say is that Latin has not in the past produced the desired result. Latin may help to make a good scholar, but it does not make a man learn to write his own language. It may be a very good thing to skip if you wish to learn boxing, but you would not like to stand up before a professional pugilist if you had done nothing but skipping. I cannot help thinking that Latin teaching has to English teaching very much the relation of skipping to boxing. In France for a great many years the greatest possible attention has been given to the teaching of the mother tongue. We know that in the entrance examination to the École Polytechnique as many marks are given for the test in French as to any other individual test. I believe that we have very great lessons to learn from our neighbours in this respect. Both in France and Germany a very large number of hours per week are given to the mother tongue, and the authorities at the War Office must make demands on the headmasters of our public schools for the same kind of attention to English. It is useless to suppose that boys must know their mother tongue because they are born in the country; it is a plain fact that they do not. I cannot help thinking that it is in the teaching of the mother tongue, in the training of the mother wit and native intelligence and originality through the teaching of the mother tongue that we have most to do for the Army and the other public Services. We must make reforms in the subjects set for essays. We must not ask our boys to write on "female suffrage"—I have seen that given as an exercise to boys—or on "the divine right of kings." Let us rather ask them, say, to describe a game of cricket for the benefit of a French boy who has never seen the game before. In such an exercise we shall find a far greater exhibition of their powers of observation and expression than in dealing with subjects on which it is impossible for them to write anything worth reading. May I just add one remark? A headmaster of a public school who knew my ideas asked me to address his masters on this subject. I consented to do so on the understanding that I should be heckled afterwards. I explained the French system, and the Army master said to me before his colleagues: "It seems to me that when a French boy has something to say he talks all about the subject; when an English boy has something to say, he says what he means; you know what he means, and he knows you know what he means, and there you are." I replied that I felt perfectly sure that his description corresponded to the facts when the English master knew *beforehand* what the boy had got to say; but my impression was that when the average English schoolboy had something complicated to explain to a man who knew nothing about it beforehand, the result was hopeless. And the Army master finally agreed with me.

The CHAIRMAN (Field-Marshal the Right Hon. the Earl Roberts, V.C., K.G., etc.):—It is unusual, I believe, for the Chairman to make any remarks when there are other gentlemen waiting to address the meeting, but I am obliged to speak now because I have to go away; Lord Chelmsford will take the Chair in my place. I only wish to express my gratitude to the lecturer for the very interesting and instructive lecture he has given us. There is a great deal in it with which I thoroughly agree. I think it is extremely praiseworthy of Colonel Murray to have taken the trouble to visit so many of the Continental military schools to ascertain their ways of educating young men for the Army, to come and give us such a very detailed account of his experience, and to compare their manner of instruction with our own system. In many ways, no doubt,

the Continental system is worthy of our attention. I have been to the military school at Potsdam, and I have seen the boys at their work, but I confess I did not come away with the idea that they were being better instructed than the cadets at Woolwich, or than, perhaps, the cadets at Sandhurst, under the arrangements lately introduced. A great improvement has taken place, especially at Sandhurst, in the way in which the military education is carried on. As Colonel Jelf has told us, the plan of the cadets at Woolwich instructing their class fellows is attended with good results, and a similar plan is now being tried at Sandhurst. I am sure we cannot have our officers too well educated if they are to be efficient. They must not only be sufficiently educated to do their own work, but they must know enough to be able to instruct the officers under them and the men they have to lead. With regard to what Mr. Somerville said on the subject of the tyranny of examinations, I do not see how that affects the question of a boy being able to read or spell. I must say I have been astonished at seeing the way in which some of the examination papers were written and spelt; I think you, gentlemen, would have been surprised at some of the papers that have come before me from time to time showing how utterly ill-educated the candidates must have been at their schools before the time arrived for them to prepare for the Army. I think with regard to what Professor Hartog has said, that it would be a good plan if boys were given essays on subjects in which they might be expected to take an interest, such as he suggested, and that they should be taught to write in their own language a simple account of what they see and know. This would, I believe, be of the greatest possible advantage. I can assure you you would have been not only surprised but very sad to see some of the specimens of writing and spelling that have come before me. General Hutchinson has remarked that Sandhurst was a very valuable entrance now to the Army, and no doubt it is becoming more so every day; but it is far too limited in its accommodation. Cadets ought not to spend less than two years there; but owing to the want of accommodation many of them are hurried through the course in one year, and unless some change takes place, they will not be there more than a few months, for there is a great paucity of officers in the Army. In the infantry alone more than 100 are needed. A large number are wanted also in the cavalry and in the Guards. They certainly will not join the Army properly prepared unless the accommodation at Sandhurst is at least doubled. This could be done at a moderate expenditure; the young cadets could then spend two years there with great advantage to themselves and also to those who will serve under them when they join the Army. It is not easy to lay down any precise rule as to the extent to which games should be played. Too much time may perhaps be given to games and too much stress may be laid upon their value; but games, as Mr. Somerville said, are a very great test of character, and I am sure that the discipline which is imparted to the boys through the games as I remember them at Eton and other schools, such as boating, football, and cricket, is very advantageous for boys in after life. But at the same time, I would like to see, and I trust that I shall see, in every school not only games but a proper course of physical training adopted, and above all, instruction in the use of the rifle. I am shortly going to Uppingham, the only school, I believe, which has for many years past had rifle shooting in the curriculum of its education. Every boy has to go through a course of rifle shooting. They have every facility for practising shooting, including a Morris tube arrangement, and I am going to Uppingham for the purpose of opening a hall

which has been erected in memory of the officers educated in that school who served in South Africa. I am assured by the Principal, Dr. Selwyn, that it is a *sine quâ non* at Uppingham School that everybody should learn how to use the rifle. I am most anxious that that should be the rule, not only in every school in the country, but in all the towns, villages, and hamlets. I am certain it is absolutely essential that the youth of the country should be taught how to shoot, if we are to maintain this great Empire. Nothing could have been worse than the shooting of some of the men who joined the Army during the war time. On their arrival in South Africa it was hoped that they could take their place in the ranks as soldiers. This they could not do because they had not been taught to shoot; some, indeed, hardly knew how to handle a rifle. I cannot say how anxious I am that this matter should be thoroughly taken up throughout the country, for I am satisfied that it is a matter of supreme importance to the future of this great Empire. I will ask Lord Chelmsford, when the time comes, to convey my thanks and those of you all to Colonel Murray for his very instructive and interesting lecture.

[The Chair was then vacated by Lord Roberts and taken for the remainder of the meeting by Lord Chelmsford.]

Mr. Spenser Wilkinson :—While I listened with the very greatest interest and gratitude to the admirable paper which Colonel Murray read to us, I could not help having a certain feeling that, admirable as the paper was, it was perhaps directed to a wrong address. The real subject of the paper was not military education, but the secondary education of persons likely to become officers. Colonel Murray told us that the cadet schools at which aspirants who wish to become officers in Prussia are trained do not give technical military instruction, but aim at laying the foundations of a sound liberal, or as we nowadays call it, secondary, education. I think the principal idea, strongly set forth in the paper, is that if your officers are to be properly educated they must have the foundations of that good secondary education, and the moral was that something ought to be done to the public schools. I think, Sir, that as a citizen and as one interested in the national system of education, I may venture to make a protest against the idea that the secondary education of this country, either in its great public schools or as a general system, ought to be handed over in any way to the charge of the authorities responsible for maintaining the efficiency of the Army. We have in recent years in this country constituted a Department of Education with a Minister at the head of it, and I should be very sorry if the Minister of Education were to allow his work to be undertaken by the Minister responsible for the maintenance and training of the Army. We have heard complaints of the public schools as regards what they supply to the Army. The Prussian cadet schools and some of the other institutions on the Continent are an attempt on the part of those countries to create institutions in some way representing the great public schools of this country. We have nothing to learn from them in the matter of the organisation and general discipline of a great school; we may have something to learn from them in regard to the system of instruction, and those lessons are being learned under the supervision of the Education Department of this country at the present time. Those of you who have followed the syllabus recently given out by the Board of Education for the secondary schools under the control of the Board—which of course are schools of a grade lower than the great public schools—will have observed

that the attempt is being made now to give them a good, sound, proper curriculum, and we may hope that the effect of that will shortly be felt upon the curriculum of the public schools, which has greatly improved in recent years, and in which a very great effort has been made to bring the teaching up to the highest standard possible. What the War Office has done, what Secretaries of State have done, has been to meddle with the public schools by saying: "We will give you a special examination, and you can have an Army class." In my opinion it is the very worst thing, both for the schools and the Army. The proper system is that the State (as has been done for what we may call the lower secondary schools) should lay down for the higher secondary schools, the public schools, what constitutes a proper curriculum, and what standard of attainment shall be regarded as justifying a man being accepted as having had a good liberal education. That could be done by having what is called abroad a leaving examination. If you have your public schools organised on that basis, with a proper leaving examination, that leaving examination will then be the qualification for going to the University. for preparing for technical studies, either at the Bar or for Medicine or for the Army. If you intend to have men of liberal education in the Army you must put them on the same footing as the other professions, and say we must take those men who have a good secondary education as proved by the leaving examination. If you leave the schools to the schoolmasters you will get a better education than if soldiers, however distinguished, attempt to meddle with the schools. Military education is the technical education of the officer in the higher branches. The British Army has not hitherto greatly distinguished itself in the higher technical education of its officers. It has a great deal to learn from Germany in that respect. If in the elementary technical studies conducted at Sandhurst and Woolwich and in the regiments the results have not always been satisfactory, may not the reason be that until the other day there was no attempt to organise any higher education under the department of the General Staff by way of the training and selection of generals? It is upon the basis of that higher education of the higher officers that Prussia has been able to develop the power of her teachers in the lower parts of military technical education; and if the Prussians have been able to obtain men of good literary education to turn into officers it is because they have solidly established and long developed a national system of secondary education. The paper we have heard read would, I am sure, have attracted the profoundest interest and been followed with the closest attention if it had been read either to the Conference of Headmasters or to the Incorporated Association of Headmasters—that is, to those who are in charge of the schools, and who are trying to raise their standard under the supervision of the Board of Education. Those are the people to whom you must appeal to raise the standard of the training of men seeking commissions in the Army. If you give them a free hand, if you take away the fetters that the War Office has imposed upon those schools and schoolmasters, you will improve your secondary education. I would submit that the citizens of this country, if they are wise, will say: "Let the Board of Education supervise the education and let the War Office attend to the technical military instruction of the officers after they have received from the schools a proper secondary education."

General Sir THOMAS FRASER, K.C.B. :—I will not take up much time at this late hour of the evening, but I should like to say a few words about the general question of education. Educationalists imply that

education is the sole road to success in life, but in this country nobody else, in the bottom of their hearts, believes it. There is some reason for that sound instinct, because success in life, whether in civil affairs or in military or naval affairs, is really due to force of character and capacity; not character in the sense in which the word has been used here, but force of character, resolution, and capacity, coupled with industry. These, except the last, are only fully discovered in war. Education never made the incompetent competent, but it puts a useful and, within limits, an essential weapon into the hands of the competent. Therefore I think we must be very careful not to look upon education as the only means of efficiency, and we should be chary of harassing officers in that direction alone, even if we be dazzled by the apparently greater efforts other nations are making. There are races in our Empire who have far greater literary agility than the Anglo-Saxon races and those of Europe, and yet they only exist in the world owing to our protection. In the war services we want, in addition to the born qualities of character, healthy, strong bodies, vitality to live through war, good digestions, physical energy, and, especially, good long sight. I think we should give credit for such of these qualities as one capable of test. Games and exercises are necessary for education, but the apotheosis of sport, backed by public opinion in this country, discredits learning, leaves too little energy for industrious study, and encourages idleness. Consequently our educational output is small in quantity compared with that of other advanced nations, and generally bad in quality. This is to be regretted; still, on the whole we are justified in assigning a limited importance to book-learning, but within those limits it is essential to enable officers, according to the nature of their services, to study and practise their profession. Such learning must be proved to be real and sufficient. It seems to me the present regulations of the Secretary of State for War for admission to Woolwich and Sandhurst, which some people denounce, are thoroughly sound because while securing some indications of liberal education, they absolutely require in the competitive examinations what is wanted for the respective branches of the Army, and I trust we shall never take less, or our Army will suffer as compared with others. With that remark I will confine myself to two points of interest on which the lecturer spoke. One is the question of oral examinations. I would not trouble you on this subject but for the fact that while he was in Europe I was in the United States at the best military school that America, and, I think, Europe, can boast of, namely, the West Point Military Academy. I was very carefully shown all the methods of oral teaching, and, on the whole, I was rather favourably impressed with them, particularly in regard to military history and geography, because there it certainly does give the cadets a capacity for expression and explanation that would be very useful to them as military officers. On the other hand, I thought it interfered with the study of the whole class in all cases, and particularly that of mathematics. In some cases it was more or less, and in other cases less than more promising. I am not quite sure that it was successful in languages, because I found that the whole class stood waiting while one cadet talked to his instructor. That, however, can be arranged differently. There is also a tendency for the teacher to spend his energy on the lazy instead of pushing the promising; it is better to get rid of the former. I think, however, the lecturer has done a service by bringing this subject up, and I hope we shall consider it and advance carefully and tentatively in that direction as far as we find that it is adaptable to our race. The only other question I wish to speak upon, and one I

think far more important, is that of outside examinations; and I regret, after what he said, that General Hutchinson had to leave the meeting. After visiting West Point I had the opportunity of speaking to one of the most eminent statesmen in America, and one who had almost unique opportunities of knowing a great deal about military matters and about West Point itself. I told him that I thought the only point where we in England were better off than at West Point was the fact that we had a body of commissioners, independent of everybody else, who conducted examinations in the military schools of the country. He, I gathered, fully recognised the merit of our system, but named reasons which rendered it impossible in the United States of America. I think, therefore, the lecturer is not entitled to conclude that in America opinion is, in principle, entirely in favour of confining the examinations for commissions to the teachers only. I was a teacher myself, and tried to do my duty during the very short time I was at it; and I give every other teacher, military or otherwise, every credit for like honesty of purpose, and for his perfect honesty of conviction that his work is the best possible; but I say that no country can know how its military education is going on if it relies entirely upon the opinion, the perfectly honest opinion, of the teacher alone. It is contended that the teacher, having been selected as the best to teach—though the lecturer does not say how he is to be selected otherwise than by results—he is the proper, and perhaps ought to be the only, examiner, particularly as he is in constant touch with the pupils. We must, however remember that while he is studying the pupil the latter studies him, and can speculate successfully on the questions he will set. I do not think that a board of railway directors, however immaculate, would venture to claim on similar lines that they ought to be the sole auditors of their own balance-sheets, or that the officials of our State Departments would ask on such grounds that they should spend their Parliamentary votes independently of the Treasury or of the supervision of the Comptroller and Auditor-General. We must have an independent audit of our military educational assets, which commands universal confidence, and we should, it is thought, be very unwise not to go on using it to the full, instead of trusting to the infallibility of the teachers on the merits of their own work, as proved by their own examinations.

Major B. St. J. Barter, *p.s.c.* (Lincolnshire Regiment):—Those who make their speeches late in the discussion have the disadvantage that the ground is considerably cut from under their feet by the fact that previous speakers have mentioned the points they intended to touch upon; but there are one or two I should like to allude to in a very few words. I am afraid I cannot agree with the lecturer as regards the advisability of joining the *commandement* and *enseignement*, and I cannot agree with him that the consensus of those qualified to judge is in favour of this course. Having been associated with the Military College and the Military Academy I have considerable acquaintance among those who take an interest in these subjects. I have spoken to a great many officers on this question, and I have found their opinion is, generally speaking, quite the contrary to that of the lecturer. It is only rational, I think, to believe that those who make one subject their speciality will teach it better than those who have to teach the subjects all round—I might almost call them "jacks-of-all-trades and masters of none." I am quite in accord with the lecturer as regards three years being too short for instructional appointments; but I think, at the same time, that if

you make it too long—say anything over seven years—men become stale. In less than three years they cannot, as a rule, acquire the power of teaching. It takes them perhaps a year or eighteen months before they get to their best, and it is inadvisable to cut them short very soon after that. The evil of expecting everyone to teach every subject I do not think could be better demonstrated than by the innovation brought into the Military Academy of putting freehand drawing under the topography instructors. There used to be a qualified instructor for freehand drawing who gave excellent instruction. Nowadays the topography instructors are expected to teach freehand drawing. I leave it to those who have ever had any experience in instruction of this nature to give the answer whether the subject would be equally well taught. It is quite possible for a man to be a very excellent topography instructor and yet to know very little about freehand drawing. As regards the subjects of examination, I am inclined to think that we are now suffering under too much examination and too little instruction in many branches of the Service. The advantages of doing away, for instance, with garrison instructors I look upon as open to question. A commanding officer is now expected to teach all the subjects that used to be taught by the garrison instructor, and I think it is asking a great deal of him to do so. I think myself that, however able a commanding officer or his second-in-command may be, there are very few of those officers who are capable of teaching as a garrison instructor used to, who was an officer selected because of his special qualifications as a teacher. With regard to the question of games, my experience has been that the best players of games are, taking the subject generally, also the best men at their work. I think the experience of most of us is that the officers who are good at games and sports are also the best officers. Games, as Colonel Altham pointed out, do a great deal to develop character, and that is a most important point which must never be forgotten.

The Rev. Dr. RENDALL (Charterhouse School):—Late as it is, I feel disposed to add a few words, chiefly in support of the remarks that fell from Mr. Spenser Wilkinson. It has been assumed to some extent that the curriculum for the Army has depended mainly upon the public schools. Even the reader of the paper used the expression that a blank cheque had been given to the public schools. Far from it. The position of the public schools for many years past has been that of shuttlecocks to the particular and generally temporary battledores that have been at the War Office. One would suppose from the language used by the Secretary of State for War that the public schools have had some monopoly or reserve of privilege; as a fact, they have neither voice nor part in the conduct or in the determination of Army examinations. Like the rest of the world, they have to accept the regulations that are laid down from time to time, often, as I think, in rather irresponsible ways by temporary and unstable committees. I for one think it deplorable that a committee of the War Office of, as I say, a somewhat unstable kind, should be able quite suddenly to lay down a new scheme of preliminary education and examination for candidates for the Army. That is what has recently happened. There may be differences of opinion about almost any curriculum; but what one has to notice in the first instance is this, that the curriculum laid down for candidates for Sandhurst and Woolwich is in conflict with every curriculum laid down by every educational body in the country that has any standing or position. If you compare it with the examinations of Oxford or Cambridge or the University of

London, or with the recent circular issued by the Board of Education, you will find that the new scheme will not enable a single candidate who has passed that curriculum, however successfully, to qualify even for the preliminary examination of any one of the learned bodies in England. What has been done is this: because there was a feeling that the number of subjects was too large and gave too complex a system of education, the committee rushed quite to the other extreme. We are told by the reader of the paper that Latin and science, which it was the intention of that Committee to bring in as alternatives, have been "elbowed out by accident." Conceive a Committee on Education laying down the lines of education for the Army of the country, and "elbowing out Latin by accident"! That is the kind of thing that can happen under the present régime. If education is to be soundly conducted in the country, it must be vested in the hands of more or less responsible authorities, who do understand the inter-relation of the various subjects, and who do study the subject as a whole. With regard to this particular curriculum, Mr. Somerville spoke hopefully. He said that Eton and Winchester—and it is true also of Charterhouse—are keeping up Latin. But is it possible to keep up Latin when everything is done to discourage it? At present we retain Latin at Charterhouse because I am convinced that in a year or two the curriculum will be necessarily changed by the weight of public opinion, which will be brought to bear upon the insufficiency of the curriculum. The natural option for candidates for Sandhurst, as the scheme of examinations at present stands, is that they shall be trained in English, History, French, and Mathematics. The curriculum seems almost designed for exclusion; no classical boy can come into it, because he is not permitted, under this system, to take Latin and Greek, and is discouraged from taking Latin; nor can any modern-side boy, for the simple reason that in the qualifying examination he is not permitted to take French and German, and in the final examination is discouraged from doing so. The subjects upon which the stress is laid, are English and history; Latin is excluded. I would like to say a word about that, because one of the speakers, Professor Hartog, has dwelt upon the great necessity of teaching the mother tongue. He said that they teach the mother tongue in France and in Germany, and therefore we should teach the mother tongue in English. Of course, to a certain extent I sympathise with the contention, but let us clearly understand that the position of the French and German people with regard to their mother tongue is very different educationally from the position of the English with regard to their mother tongue, for the simple reason that the English instinct for language is on the whole more slovenly, more slipshod, and less sensitive than in any other European language. English has virtually divested itself of accidence, and has done the most that any language can to divest itself of syntax. Consequently training in English is less effectual as an educational instrument than in French or German. The natural insensitiveness of the English mind to the graces and the delicacies of language have been very largely redeemed and helped by the fidelity of the English to classical training. The greatness of our literature and poetry rests much on the fidelity of the English people to classical training in Latin and Greek, and it is an implement of education with which we can very little afford to dispense. With regard to games, practical knowledge may correct what rests largely upon false impression. Language used to-day in the course of the discussion implies that the interest in games preponderates over every interest, that the leaders at games are the aristocracy of the schools, and so forth. There

is a certain amount of truth in it. The leaders in games, owing to their energy, owing to their character, owing to their physique, owing to their power of self-government and initiative, are among the natural leaders of the boys; but anyone who supposes that the places of higher responsibility are mainly or entirely entrusted to athletes must be ignorant of the working and the constitution of a public school. Everybody who has been at a public school knows well that the monitors or prefects to whom the offices of trust and leadership are confided are far more the leaders in things intellectual than the leaders in things physical. Surface views easily mislead. If you converse with a merchant or a lawyer in ordinary social intercourse, what does he talk about? He does not argue cases or quote prices of corn or wool and cotton; he more probably talks to you about his golf on Saturday. So, too, the natural interest of games engages the boy's mind in the same way as it does the minds of grown men. But take a much truer and sounder test of the realities. If at the sanitorium I hear the talk or the light-headed ramblings of a sick boy, I can assure you that nine-tenths of his story is concerned with his work and not with his games. Work is the natural assumption of his life; it is not a matter for social conversation, nor perhaps the matter of his letters home, for the very good reason that it is a dull thing to write about, but he does it with all his heart. Again, the interest of life centres naturally for the boy in the world of *action*. It is the world of action that gives us the topics of our talk, and that world of action is rigidly limited and restricted at a public school. The time apportioned to games is only so much as is considered best and most salutary for just development, and within these limits everyone in England may be heartily thankful for the amount of life and energy and spirit and initiative and self-government and temper and chivalry and other manly qualities which centre about the games of boys at public schools. As has been already remarked in the course of the discussion, the public schools are continually submitted to other tests and ordeals than those of the preparation of candidates for the Army. What I do find is that if you look through the lists of scholarships at the University, or if you consider the request for candidates—be it in solicitors' offices for articled clerks, or be it at the Bar, or in the Church, or in the medical profession—what I find is that public schoolboys are in request, and that they more than hold their own with those who have not come from public schools. Letters reach me from colleges saying: "We desire above all else to get a public school connection"; and letters of the same tenor from solicitors and others. If the Army stands alone in finding their preparation and equipment beneath and not above the average, does not the fault rest with the special conditions and restrictions imposed by the Army itself? One thing more. The public schools are submitted to the test of the loyalty which they inspire; as long as they stand firm in the affections and in the loyalty of those who have been at them and know them best, we may be fairly certain that their curricula, their aims, and their ideals are continuing sound.

Colonel E. GUNTER, *p.s.c.* (late E. Lancashire Regiment) :—I will detain you for only a few minutes in regard to two of the subjects that my old friend the lecturer has so ably and eloquently brought before us. They are :—1, Sandhurst; and 2, the German schools. I have known Sandhurst since I entered it as a boy of fourteen, and I have always felt the greatest attachment to and interest in it. I was there less than five years ago, so I know the way in which things are now being carried on. I rejoice that the instruction and discipline are now combined in

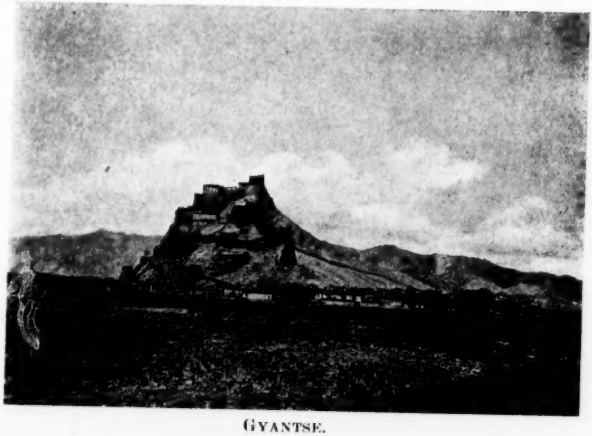
the same person. I have only one suggestion to make in regard to that. It is excellent as far as it goes, provided the proper officers are chosen. As an officer well known at Sandhurst has remarked, it is very difficult to find officers who are good in more than one subject. I venture to suggest in regard to that, that there should be, as at Woolwich, chief instructors in each branch, and I do not see why the captains of companies at Sandhurst should not be chosen as experts in their particular branch. There are six captains, and each one might be an expert in one of the six branches—not that he should interfere with the instructors under him—but that he, being himself an instructor, should co-ordinate and supervise the work, and so all the instruction would be on a more or less uniform system. That would be much fairer to the cadets. With regard to the question of examination by outsiders, it is a burning one. Those officers who have been instructors at Sandhurst, or who are so still, perhaps, object to examination by outsiders; but, I think the fairest thing, taking it all round, is that there shall be a certain number of marks given by the instructors themselves at their examinations, and also a certain proportion of marks should be given by outsiders who are not likely to be influenced in any way. I do not, for a moment, mean to suggest that any instructors at Sandhurst or Woolwich are not immaculate so far as giving marks are concerned, but it must be remembered that the cadets who are being examined will naturally give an answer to a question they think their instructor would like; it is only human nature, and they will not use their own brains so much. With regard to Germany, it was my privilege last year to be allowed, while I was in Germany, to visit a good many of the schools. I visited the Cadet House at Karlsruhe; I visited the War Schools at Munich, in Bavaria; I visited the Staff College and the Cadet Schools there. I was received with the greatest kindness and attention; I cannot speak too highly of the great courtesy with which they allowed me to look into everything. Also, I cannot speak too highly of the way in which those schools are conducted as regards discipline, as regards smartness, as regards the alertness of the cadets, their admirable physique, their training, swimming and gymnastic exercises, and above all, the admirable way in which the instructors in the German Army seemed to be chosen. Each instructor seemed to be particularly fitted for the work he had to do. But while I think it is of great importance to have the oral system of question and answer very much more carried out in our schools than it has been in the olden times, I must say that I was not so much struck with their superiority in this respect. I have been engaged for very many years, both in teaching and examining, and I know Germany well, having been acquainted with it since I was sixteen years old; and I have made the acquaintance of a good many German officers since then. In connection with the German instruction, I should say that practically there is not the slightest doubt that the cadets who got up and answered questions before me were all coached up. They got up as smartly as possible, and answered every question. I never was allowed to go unless I had given a week's notice. It took me two months to get to the schools at Karlsruhe; I had to get the permission of the Emperor, which was very graciously granted to me. I have no wish to say anything against the Germans; I thoroughly recognise their ability. The oral system is thoroughly carried out, the practice in lecturing is most excellent, and, what I would wish to see carried out in our military schools; but theirs was more like, what we used to call in the Service, "communicating drill." I do not think, therefore, pace the lecturer, the general intelligence of the cadets there is in any way

superior to ours, and I should like to express the hope that if the oral system is carried out, it will not be carried out in the somewhat cut-and-dried way which I saw in Germany.

Colonel MURRAY, in reply, said:—I believe it is the custom in this Institution for the lecturer to reply to the criticisms and questions, which have been asked, during the course of the discussion; but owing to the lateness of the hour—it is now, I am sorry to say, nearly half-past five—and to the fact that we have had two-and-a-half hours here, which time has been taken up with a long lecture, and a long and interesting discussion, I think I shall best consult the Chairman's convenience and that of the meeting, if I forego a privilege, which, had there been time, I should very much like to have availed myself of. There are very many points I should like to have discussed, but it would have taken fully another hour to go through them all, and I feel I ought not to trespass further on your time. I notice that those ladies who have honoured us to-day with their presence are already showing signs that the hour for afternoon tea has passed by, so I think it is quite time to bring the discussion to a close. But there is one point I should like to refer to for one moment, that which Dr. Rendall and Mr. Somerville especially mentioned, the question of athletics. What I tried to bring out in the lecture was the difference between athletics and games. Both are very good things in their way, but they are not the same thing at all, and we must not think they are. I am quite sure if I had compared the present English game player, the creation of the last quarter of a century, the croquet player, or the tennis player, or the cricket player, or the golf player, with the old Greek ἀθλητής, I should have very seriously offended the immortal gods, Ulysses and Achilles would have turned in their graves, and Father Zeus would have sent down the swift-footed Iris to stop the lecture! Quite seriously though, I may say, that I have in my possession a large amount of evidence from headmasters of schools and other individuals, showing that there is a strong and growing undercurrent feeling in the country protesting, not against games—we all of us love games and sport—but against the excess of games, and especially against the excess of games as carried on in the public schools. Only the other day the Board of Education took the opinion of the headmasters of 101 leading preparatory schools on the following question:—"Whether games were carried on in public schools to an excessive degree or not?" 59 headmasters answered "Yes," and 42 answered "No." Without delaying you further I will just read this one short extract from a letter from the headmaster of the public school to which Lord Roberts is going on the 28th inst. I refer to Uppingham. The letter is from Dr. Selwyn, upon whose shoulders the mantle of Edward Thring, the greatest of all schoolmasters, has fallen, and which he has given me permission to read:—"Of course, we all strive after character, but the excess of athletics is ruining everything, and especially the talk of athletics. We are as a people rushing to our downfall." Ladies and gentlemen, I thank you very much for the kind way in which you listened to my lecture. I also wish specially to thank those who have taken part in the discussion for their temperate and kindly remarks, and for the absence of any of that heat which we always try to avoid in the serene atmosphere of this theatre.

WINTER HEAD-QUARTERS, CHUMBI VALLEY.

PHARI.



GYANTSE.

Camp on the Karo Pass, 16,400 Feet.

Pete Jong on the Yamdok Lake.

Ferry Boat crossing Brahmaputra at Chaksam.

TO LHASA WITH THE TIBET EXPEDITION, 1903-04.

By Lieut.-Colonel H. A. IGGULDEN, The Sherwood Foresters, late Chief Staff Officer Tibet Mission Force.

Illustrated by sixty lantern slides and a map of the country.

Thursday, 4th May, 1905.

Major-General Sir J. WOLFE MURRAY, K.C.B., R.A., *p.s.c.*, Master-General of the Ordnance, in the Chair.

I PROPOSE in my lecture this afternoon to do my best to give you a brief narrative of the Tibet Expedition of 1903-04, from its commencement to its successful termination, and to deal with the subject chiefly as a military exploit; as from the moment it became evident that strong measures would be necessary, owing to the Tibetans obstinately refusing to negotiate or have anything to do with Colonel Younghusband's mission at Kamba jong in the autumn of 1903, up to the time of our triumphal entry into Lhasa a year later in 1904, the Expedition bore an almost entirely military aspect; during which time we were at war with the Tibetans, and had to take every military precaution to safeguard ourselves and long line of communications, in a hostile and most difficult country.

For centuries the Tibetans have observed the most rigidly exclusive policy which has consistently been encouraged by China, the suzerain power. For many years, after faint but futile efforts at establishing friendly relations, we had let them severely alone; and it was not until 1887 that we became embroiled with them over an attempt to despatch a peaceful mission to Lhasa under Mr. Macaulay, with the consent of China. The Tibetans then took alarm, and not only refused point-blank to receive the mission, but expressed their intention of opposing it by force of arms should it enter their country. The despatch of this mission was then abandoned at the request of China, but in the meanwhile the Tibetans had become most aggressive, and were intriguing with the independent Native State of Sikkim which was under our protection, and with whom we had a treaty. When they further aggressively sent an armed party into Sikkim itself and occupied a position at Lingtu, building fortifications astride the only trade road to Tibet, it became necessary to turn them out by force. This resulted in the Sikkim Expedition of 1888, lasting a year, throughout the whole of which I was present with my Regiment, when we fought three engagements with the Tibetans, in two of which they were the attackers; finally driving them back into Tibet over the Jalep pass and pursuing them as far as Chumbi,

after defeating them heavily at Gnatong. As a result of this campaign, a treaty was made in 1890, after lengthy negotiations with China on behalf of the Tibetans, which defined the boundaries of Tibet and India, and certain trade relations between the two countries. This treaty had never been observed by the Tibetans, who refused to acknowledge that the Chinese had any right to make it on their behalf. They impudently tore down boundary pillars when erected, and laid claim to a large tract of country on the north of Sikkim, on the southern slopes of the Himalayan watershed, contrary to the terms of the treaty; stopped all trade, and in other ways behaved in a most impossible and arrogant manner.

In 1902, I was sent on special duty by Sir Power Palmer, the late Commander-in-Chief of India, to accompany Mr. Claud White, the Political Officer of Sikkim, with a small escort of 200 rifles of the 8th Gurkhas to the north of Sikkim, for the purpose of asserting our rights in that country, expelling the Tibetans, and exploring and defining the boundary. This we were able to do without bloodshed, though the Tibetans were as obstructive and obstinate as ever, and would hold no formal communication with us. After considerable hardships, and mapping out a large tract of hitherto unknown country, during which time we were at altitudes between 16,000 and 22,000 feet, we returned to India in the autumn of 1902.

About this time disquieting news began to filter through to India by Tibetan traders (who all along had been allowed free access to our country, though our traders were religiously excluded from theirs) that a Russian Buriat of the name of Dorjieff was present at Lhasa and exercising a great deal of influence over the Delai Lama, who is the temporal as well as spiritual governor of Tibet. This news, together with the open declarations of the Tibetans that the Russians would assist them, and other significant rumours, determined the Government of India to take further measures to get into definite touch with the Tibetans, and come to a plain understanding on the many important matters which had long been the subject of dispute. Accordingly in the summer of 1903, Major Younghusband, C.I.E., of the Indian Political Service, and a Central Asian traveller of repute, was nominated by the Viceroy, Lord Curzon, as British Commissioner for Tibetan Frontier affairs, with the temporary rank of Colonel in His Majesty's Army, and sent to Kamba jong, the headquarters of a Tibetan district, and some 14 miles beyond the northern boundary of Sikkim, with instructions to open negotiations with the Tibetans and try and obtain a settlement of the points in dispute. Colonel Younghusband, accompanied by an escort of four companies 32nd Sikh Pioneers, arrived at Kamba jong on 18th July, 1903, and remained there for some three months waiting at that most inhospitable spot at an altitude of 13,800 feet, patiently trying to get the Tibetans to open negotiations. The Tibetans, however, refused to negotiate, and trusted that with the approach of winter, the mission would be withdrawn, and that no further notice would be taken of their delinquencies and intrigues. They had, moreover, assembled a considerable force of troops in the vicinity of Kamba jong, and had made prisoners some British subjects.

By October, 1903, affairs had come to an *impasse*, and it became evident that the only means to make the Tibetans recognise the seriousness of the situation, was a further demonstration of force, and an advance into the heart of Tibet, where we could make them

come to terms. The Chinese, notwithstanding friendly expressions of a desire to settle the differences between the Tibetans and ourselves, either could not or would not take any active steps in the matter to enforce their authority.

We had at this time in Sikkim as a support to Colonel Younghusband's personal escort at Kamba jong, the other wing of the 32nd Sikh Pioneers, the 23rd Sikh Pioneers, and a company of Madras Sappers and Miners, besides the ordinary garrison at Guntok of two companies of native infantry, altogether about 1,800 fighting men, with a certain amount of transport, forming a very fair nucleus to the force necessary for a further advance into Tibet. These troops had been employed making roads and improving the communications in the lower part of Sikkim.

Additional troops were ordered to Silliguri in November, to make a force of sufficient strength to enable the Expedition to reach Gyantse if necessary, as it was not then considered by most people, that the opposition of the Tibetans would be serious; it being thought that the mere show of force would be sufficient to bring them to reason. Consequently, preparations were not made on a very large scale, and a minimum amount of transport was provided.

Colonel J. R. Macdonald, C.B., R.E., was selected by Lord Kitchener for the Command of the troops, with rank of Brigadier-General, and I was fortunate enough to be selected as his Chief Staff Officer, thus for the third time being connected with military operations on the "Roof of the World," in these parts. The other staff officers of the Force were Major Bretherton, D.S.O., as Chief Supply and Transport Officer, Lieut.-Colonel Waddell, C.I.E., as Principal Medical Officer, and Captain Elliott as Field Engineer. These were subsequently considerably added to as the Force and the magnitude of the operations increased.

General Macdonald had already gained fame as a leader of men in Uganda and East Africa, besides having seen active service in various other parts of the world, and more recently in China, so that we were all pleased at having so able an officer in command of what promised to be a most adventurous and extraordinary expedition. That he fully maintained and added lustre to his fame by his very able conduct of a year's military operations in unparalleled circumstances, will no doubt, be realised as my story is farther unfolded.

The troops chosen for the expedition were:—

1 section No. 7 British Mountain Battery of two 10-pounder mountain guns.
No. 12 Company Madras Sappers and Miners.
No. 3 Company Bengal Sappers and Miners.
A detachment of Norfolk Regiment, with two machine guns.
23rd Sikh Pioneers and two machine guns.
32nd Sikh Pioneers and two machine guns.
8th Gurkhas with two 7-pounder R.M. guns.
1 section British and 4 sections Native Field Hospital.

A compact little force of about 3,000 fighting men, all of whom had been through a careful medical inspection as to their fitness for service in great cold and at extreme altitudes.

Since operations had to be commenced as the severest part of the winter was coming on, it was very necessary that none but the hardiest men should be chosen, and that they should be adequately

provided with warm clothing. Thus every man of the force in addition to the ordinary scale of winter clothing served out to him was provided with a long sheepskin overcoat, a thickly cotton-quilted rug, a pair of fur-lined bag gloves and also an extra pair of woollen gloves, two extra thick lambswool vests, a pair of quilted overalls and extra thick woollen socks, a pair of quilted felt knee boots, a heavy woollen comforter, and a pair of blue goggles to prevent snow blindness. And very necessary this extra warm clothing proved to be, as without it a large number of our men would undoubtedly have perished from pneumonia and frost bite.

Officers provided themselves with fur sleeping bags, and had all their clothes lined with chamois leather, and made other preparations for campaigning under Arctic conditions; whilst our ponies' bits were covered with rubber, and the cheek pieces sewn over with leather to prevent the iron from ulcerating the animals' mouths in the extreme cold.

Colonel Younghusband had returned to India about the beginning of November, leaving his escort of 32nd Pioneers and some members of his mission at Kamba jong to watch the Tibetans and keep them occupied whilst the new phase of operations was being arranged and plans for the advance into Tibet matured.

General Macdonald decided to advance with the greater part of his force into the Chumbi valley by way of the Jalep pass, withdrawing the escort to the mission at Kamba jong back into Sikkim on the same day that he crossed the Jalep pass into the Chumbi valley.

In order, however, to make the Tibetans believe we were going to advance by Kamba jong, our real intentions were kept absolutely secret, and everything possible was done to mislead them as to our real objective, the Chumbi valley.

After some delay waiting for the arrival of the essential warm clothing, all the troops had arrived at our railway base at Silliguri by the end of November, and marched to various places in Lower Sikkim, from whence at the beginning of December they commenced rapidly to march by detachments to Gnatong, which was so long held by our troops in the Sikkim war of 1888, and garrisoned for some years subsequently. The route from Silliguri for the first four marches followed the banks of the Teesta river along a fair cart road with an easy gradient until Rungpo is reached, where it turns sharp to the north up the Rungpo river, becoming a narrow track along which one has to march in single file. At Rongli the road commences to ascend very steeply, rising some 10,000 feet in a dozen miles, up the gigantic Lingtu spur, four miles beyond which Gnatong is reached. The climb is a tremendous one for troops arriving from the plains, and many and deep were the groans of the exhausted men and coolies as they painfully and slowly toiled up the stupendous height. The breath comes shorter and shorter as each step takes one higher and higher, and the soldiers, encumbered as they were with extra clothing, rifle, bayonet, and ammunition, plodded painfully to the chilly and bitterly windy heights above, to arrive in camp, after hours of patient climbing, late in the evening, with a racking headache and bursting eyeballs. It was indeed a trying climb to all, and it takes some little time for men new to these vast altitudes to become accustomed to them and get over the mountain sickness, which nearly always affects new comers. One indignant Tommy, who, after hours of laborious climbing up the steep never-

ending path, was heard to exclaim to his comrades: "Look 'ere, Bill, 'ave 'ad enough o' this; I was told as 'ow Tibet was a blooming table land!" "So it is," replied his pal, "can't you see ye're climbing up one o' the legs on it!"

By the 9th December all the troops for the advance to the Chumbi valley had concentrated at Gnatong, and Major Bretherton had with great difficulty worked up about 10 days' supplies for the force, arranging for more to follow.

We had long recognised that the supply and transport question would be our great difficulty in this campaign, and we were fortunate in having in General Macdonald an organiser of the highest powers, who devoted an immense amount of labour and forethought to working out every minute detail connected with this primary factor to success. Our transport difficulties were early to cause us the gravest anxieties. The Nepal Government had kindly assisted by sending us a large number of coolies, and had also promised 3,500 yaks and half-breeds for pack transport at high altitudes. On these we were largely depending for transport in Tibet, where wonders were expected of them on account of their being accustomed to live at high altitudes and their reputation for being able to carry full loads long marches, requiring nothing beyond the grazing they could pick up on the way to keep them going. Our minds were, however, to be disabused as to the capabilities of the yak before the expedition was over, for they broke down most lamentably. The 3,500 yaks that were to have marched from Nepal along the frontier and to have joined us at the head of Chumbi valley, were turned back by the Tibetans, who refused to allow them to proceed. There was then no other way of getting them to Chumbi but by the way of Sikkim, to do which they had to descend into the lower valleys. Unfortunately before reaching the borders of Sikkim they contracted anthrax and rinderpest, which caused enormous mortality, so that eventually only some 400 arrived in Chumbi, and these so enfeebled that they there contracted another fatal disease, pleuro-pneumonia, out of which only some 30 or 40 survived. Our Indian draught and pack bullocks on the lower lines of communications also suffered much from rinderpest and foot and mouth disease, greatly retarding the forwarding of supplies. Over the higher passes we were dependent almost entirely on coolies, and after these men had settled down they did most excellent work; but at first they were very mutinous, and owing to the extraordinary prestige the Tibetans had along this frontier, nothing would make them believe but that we were all going to our doom, and that the Tibetans, assisted by mountain demons, called to their aid by the Lamas, would easily defeat us; and that they too if found with us would be put to horrible torture and death. The beating we gave the Tibetans in 1888 seemed to count for nothing, and desertions became alarmingly numerous. Fortunately we had some excellent officers in charge of the coolie corps, who by their firmness and tact, and by playing on the men's superstitions and various amusing devices, were able to keep these men in order, and eventually get them to perform their onerous labours contentedly and well.

The only really reliable transport we started with, was the pack mule corps of the Indian Army. This transport is highly organised and trained, and splendidly equipped for service in the mountains, being probably the best Army transport in the world, and had we only had enough of it we should have had little to trouble about; but

to start with, we were only allowed about 800 mules, as the Government of India did not care to engage a large portion of this most valuable transport on a minor expedition. We had therefore to raise local pack pony corps and get whatever contract ponies and mules we could obtain in Darjeeling, Sikkim, and Bhutan to assist us in getting forward supplies. Mr. White, the Political Officer in charge of the Sikkim State, helped us enormously by raising a special coolie corps of his own, which, when duly organised, was most valuable in placing some 15,000 lbs. of supplies daily into the Chumbi valley over a second road by way of the Natu pass.

Everything was ready, and being most providentially favoured by the weather having kept clear and no snow having fallen—a most unusual thing at this time of the year at these altitudes, and very different from what it was in 1888, when Gnatong in December was under several feet of snow—a start was made from Gnatong to the foot of the Jalep pass on the 12th December, 1903, a short march of only 5 miles, but involving a steep ascent, trying to both men and animals. It was long after dark before the rearguard reached camp, our difficulties being accentuated by a large number of the locally enlisted pony drivers deserting, and to a mutiny among the coolie corps at Gnatong.

The advance force for crossing the Jalep pass consisted of our two 10-pounder guns and two 7-pounder guns, the latter carried by gun porters, half company sappers and miners, two machine guns Norfolk Regiment, six companies 23rd Pioneers, four companies 8th Gurkhas, and a section Native Field Hospital, comprising about 1,200 fighting men, 800 transport drivers, and 1,400 transport animals. This was followed on the 13th and 14th by two smaller columns bringing on ammunition and supplies; as not knowing what opposition might be met crossing the Jalep and in the Chumbi valley, the advance column was kept as free of impedimenta as possible, and only fighting men with transport for their baggage, ammunition, and three days' supplies accompanied it.

Simultaneously on the 12th December, the remainder of the mission and escort under Lieut.-Colonel Brander's direction, successfully retired from Kamba jong, over the lofty Kongra pass, 17,000 feet high, into Sikkim, experiencing great hardships and intense cold in doing so, a few men succumbing to the cold and altitude combined.

The Jalep pass was reconnoitred and found to be unoccupied and picketed by our troops for the night, though rumours of a Tibetan Army hastening from Kamba jong down the Chumbi valley were rife. These proved to be unfounded, and we crossed the Jalep pass, 14,390 feet high, on 13th December, descending on the northern side some way down the Chumbi valley to a place called Langram, where we had great difficulty in finding room to camp. We were met here by a Tibetan and Chinese deputation, who, as usual, requested us to return to Gnatong, where they said everything might now be satisfactorily arranged. The following day we passed the fortified Tibetan wall at Yatung, and reached the bottom of the Chumbi valley, where we were on more level ground, with cultivation and villages at close intervals. A farther advance to a large fork in the valley, where the Ammo and Rido rivers join, a couple of miles above the Sikkim Raja's palace at Chumbi was made in the next two days, and here we entrenched ourselves and gave men and animals a few days' rest. We then collected some supplies, and laid out stages

for the forwarding over the Jalep of rations pending a further advance to the important Tibetan town of Phari at the head of the Chumbi valley. The weather had remained fine, though the nights were intensely cold, with about 22° of frost, whilst a trying dusty wind blew violently during the day time.

Our rapid advance into the Chumbi valley had completely paralysed the Tibetans, and they were quite taken by surprise. Their intelligence branch could not have been up to the mark, as we learnt afterwards that on seeing our force at Kamba jong retire across the Kongra pass, they fondly imagined that we had withdrawn for the winter, and that all further trouble was over for the present, consequently they had dispersed their Army at Kamba jong, most of whom had gone off to their homes. They were thus unable to collect them again in sufficient time to oppose us in the Chumbi valley before Phari was in our possession.

During the few days' respite we had at Chumbi, a company of mounted infantry composed of men of the 23rd and 32nd Pioneers, and 8th Gurkhas, was organised and equipped, being placed under command of Captain Ottley, of 32nd Pioneers, which, with the 2nd M.I., under Captain Peterson, which arrived from India a few weeks later, did splendid service, and became the terror of the Tibetans.

On the 18th December, General Macdonald, with a small flying column, rapidly advanced to Phari, which was seized and occupied on the 20th. The road from Chumbi to Phari passes through the wildest country, and at the time, over the most execrable track imaginable; for beyond the Lingma plain, which is about 2 miles long, and formed by the old bed of a lake some 7 miles from Chumbi, the path twists and turns through a succession of rocky granite gorges, flanked by huge mountains, which had they been held by a few determined riflemen, would have been impassable without long turning movements taking some days. As it was, the road was so bad picking one's way over and round enormous jagged slippery masses of fallen granite, that it was always long after dark before the weary rear guard reported its arrival in camp. The narrowness of the valley in its upper reaches allowed little sun during the winter months to penetrate its depths, so that the cataract of a stream was frozen over in the most wonderful way. It was at the camping ground of Dotha, otherwise known as the Camp of the Frozen Waterfall, that we had presented to us the wonderful and beautiful sight of a large waterfall tumbling over a rock 100 feet high, frozen as if by magic.

Two miles beyond this frozen waterfall the path emerges on a lofty open down-like country, destitute of shrubs or trees, the hill-tops become rounder and slopes easier, and typical Tibetan country is encountered, whilst 9 miles farther on the town and fort of Phari is reached. This proved a most important place to us, and we were fortunately able to occupy it without opposition. The fort is a large and high stone castellated building, standing in the middle of a plain, backed by the lofty cone-shaped peak of Chumolarhi, 24,000 feet, some 6 miles to the north. The town (a collection of stone and turf huts) nestles at the foot of the fort on its southern and eastern side.

General Macdonald occupied Phari on 20th December, with two companies 8th Gurkhas, and this proved a most important advance base for us, as not only is Phari Fort an important Tibetan mobili-

sation centre, containing stores of grain and fodder, but a considerable amount of food, fuel, and fodder was obtainable in the town. Phari is also on the main trade route to Bhutan, from which also some supplies were obtainable.

Otherwise, Phari is a filthily dirty place, and bitterly cold, the temperature at night being minus 9° Fahr., or 41° of frost, whilst the wind in the daytime was awful. Almost the only fuel obtainable is yak's dung, and life there during the winter months, for the unfortunates who had to endure it, must have been a near approach to the cold hells the Tibetans so vividly depict in their paintings, as equally bad and painful as the hot ones. Nearly everyone lost their voices in this trying place, whilst faces and hands were blistered and chapped with the wind and cold. We woke up in the morning after a fitful night's sleep to find little heaps of hoar frost from our frozen breath deposited on our flannel pillows, whilst our moustaches were frozen to our beards by a solid lump of ice, as without exception, we were all forced to grow beards, which were found to be a great protection. One officer even assured me that he woke up after a particularly cold night with his eyelids frozen together.

After establishing the post at Phari and leaving it a fortnight's supplies, the General returned to Chumbi for Christmas Day, and to make preparations for a further step forward.

The country beyond Phari, and indeed in the Chumbi valley itself, was so unproductive that the local supplies would in no way suffice for our wants, and practically everything, including even fodder, had to be laboriously transported in midwinter over the enormous passes from India. It thus became necessary for General Macdonald to be constantly arranging stages and posts as we advanced farther from our base, and what was equally important to make and improve communications. I may here mention that throughout the whole year we were in Tibet the troops were constantly kept at work making the road, which was realigned and improved beyond recognition, so that there now exists a road to Gyantse, which would not require much more labour to turn into a cart road the whole way. The Sappers and Miners, 23rd and 32nd Pioneers, and 8th Gurkhas, did splendid work in this connection during the winter, when the ground was frozen solid, and the handling of an iron tool often meant badly blistered hands.

All this time Colonel Younghusband was constantly receiving reports from the Chinese, that the Chinese ambassador was starting from Lhasa to meet him, and that he would shortly arrive, but although dates and details were mentioned, he never came or even made a start.

So circumstantial were these reports that Colonel Younghusband desired to be placed at Tuna, a small village on the great plain beyond the Tang pass, in order to meet him on his arrival, in Tibet proper. Accordingly, another and larger flying column was organised by General Macdonald, and set out for Tuna on 4th January. The Tang pass, 15,700 feet, was crossed on 9th January, when Tuna was reached after the most trying and fatiguing march of the whole campaign. The wind was blowing a hurricane in our teeth the whole day, driving small stones and ice-splinters in our faces, so that we had to halt every quarter of a mile to gain breath and a respite from its blasts. The camp was reached at dusk near a spring of water

gushing from the foot of a sand-stone hill a mile beyond Tuna, and a feeble attempt made at entrenching ourselves, but much could not be done, as the men were too exhausted to work, and indeed, too tired to even cook their food. To make matters worse, news was brought us by some Chinese that a Tibetan Army was in our vicinity and intended attacking us that night. Fortunately we were left in peace.

The following day, after an anxious night, the Tibetan Army was located in a side valley about 12 miles off to the west. The village of Tuna was occupied and placed in a state of defence. Colonel Younghusband and the mission remaining there, to await the arrival of the Amban or Tibetan delegates, with an escort of four companies 23rd Pioneers, one 7-pounder gun and Norfolk machine guns, some sappers, medical and supply details, with a few mounted infantry, under Lieut.-Colonel Hogge, 23rd Pioneers.

General Macdonald once more returned to Chumbi to make fresh preparations for the further advance to Gyantse and to accumulate sufficient supplies at Phari, which now became our advanced base. All this necessitated an increase of transport and a redistribution of troops along our lengthening line of communications. It was calculated that 1,200,000 lbs. of grain and rations must be accumulated at Phari before an advance to Gyantse could be made, as no supplies were obtainable between Phari and Gyantse, a nine days' march. In addition to this large accumulation, the garrison and post at Tuna had to be fed, and supplied even with fuel, which largely complicated and delayed matters.

The Tibetan Army near Tuna retired to Guru and occupied a position some eight miles north of our post at Tuna, where they remained threatening the mission until we dispersed them at the end of March.

The next two and a half months were spent in making roads and straining every resource to get together the necessary supplies and transport at Phari to enable an early advance to be made to Gyantse. Some 800 ekkas were obtained from India and transported in pieces over the narrow tracks and passes of Sikkim, and eventually after enormous difficulties landed at Phari, where they were put together and afterwards staged 80 miles towards Gyantse, over the plains, where it was possible to use them. As General Macdonald remarks in his despatch:—"This period was one of grim strain, and I cannot speak too highly of the fortitude and endurance of all ranks, by whose efforts the necessary arrangements for an advance were completed by 24th March, 1904." On the 29th, General Macdonald had concentrated a strong column at Tuna, sending back all available transport to Phari to bring on more supplies.

Although no actual hostilities had up to this time taken place, it was pretty certain that the Tibetans meant fighting, and would oppose any forward movement. Colonel Younghusband had failed to induce them to negotiate, nor had the Chinese Amban put in an appearance from Lhasa.

At this time the Tibetans had about 7,000 men in the field, of whom about 3,000 were at Guru, 2,000 at Hram on the east side of the Bhamtso lake, barring the only two routes to Gyantse; whilst there were some 2,000 in reserve between Kalatso and Gyantse.

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The Tibetans were seen strengthening their walls and defences in front of Guru on 30th March, and on the following day an advance

was made against them, with the object of establishing a depôt at Guru and forcing the Tibetans back should they attempt to bar our onward move. The troops accompanying the advance were:—

4 guns.
200 mounted infantry.
Half company sappers.
9 companies infantry with departmental details.

An early start was made, the morning being very cold and the ground covered with snow. After some miles of open plain had been traversed, we were met by the Tibetan officials, and a parley was held which resulted in nothing. After our refusing their usual request to return to Gnatong and our reply that we meant to advance to Gyantse, they informed us that there would be trouble if we did. They then galloped back to their position some 3 miles off, which was situated along the crest of a descending spur of the mountain, at the foot of which was a rough stone wall about 5 feet high joining on to a mud hut about 200 yards out on the plain, which was perfectly open to the east—a bad position for them, as it could easily be turned.

Orders were issued for our men not to fire unless fired on, and though the Tibetans were seen excitedly crowding into their walls, the order was obeyed with splendid discipline, and our troops climbed the hills and turned the Tibetans out of their "sungurs" one by one without a shot being fired. The Tibetans then all collected behind their wall on the plain, where all their chiefs and generals also were. Eventually our men practically surrounded them on three sides, and they were told that they must either retire or lay down their arms. They refused to do either, and a struggle ensued in an attempt to disarm some of their leaders. Some of our men were drawn up in front of the wall only 20 or 30 paces off, when suddenly there was a shot fired, followed immediately by a ragged volley from the Tibetans lining the wall, into the mass of our men, several of whom were hit. It is said that the Tibetan general fired the first shot with his revolver, blowing off one of our Sikhs' jaws. Be that as it may, they undoubtedly treacherously opened fire on us at close quarters, as I was only five yards from the spot when it happened. As soon as our men realised what had occurred, a withering magazine fire was opened from three sides into the mass of Tibetans, causing terrible havoc and slaughter, in which practically all their leaders and the flower of the Tibetan Army perished. The whole affair was over in a few horrible minutes. A further stand was made by some more Tibetans an hour later at the two villages at Guru, three miles beyond, when, after an hour's fighting, some 200 of them were captured and the remainder put to flight.

Our troops returned to Tuna after a long and trying day. A post was established at Guru, where a considerable amount of Russian-made ammunition was found, together with quantities of powder and war-like stores; a few Russian-made small-bore rifles were also captured. The other wing of the Tibetan Army on the east side of the Bhamtso lake, on hearing of the defeat of the Guru Army, retreated hastily during the night towards Gyantse.

More supplies having arrived, the advance to Gyantse was continued on 4th April. The road lay along the barren and desolate shores of the frozen lake Bhamtso, through a gorge with a stream running from Bhamtso lake to the Kala lake, then over another

wide plain till a stream was found at Mendza, which was the Nyan river flowing downwards towards Gyantse. This section of the route was for 40 miles almost quite level at an elevation of 14,900 feet. The road on to Gyantse was found quite an easy descent following the banks of the river down a valley with high mountains on each side. After proceeding some distance along the Nyan river a few stunted trees and some cultivation were seen, which increased as we approached Gyantse. Posts were formed at intervals of every 12 miles or so, the Tibetans falling back before us as we approached Gyantse with occasional slight skirmishes. Having received reinforcements from Gyantse, the Tibetans, however, made a stand on 10th April at the formidable Zamdung, or Red Idol, gorge, some 18 miles from Gyantse, where they took up a very strong position on the mountains overlooking the gorge, and amongst the tumbled mass of boulders and rocks in the gorge itself. This necessitated our sending the Gurkhas up the mountains to the west, a climb of 3,000 feet, to turn their flank—a long operation, lasting some 4 hours, during which we were enveloped in a snow storm. After a long wait, in which our guns were exchanging shot for shot with the Tibetan pieces posted on the opposite height, the crackle of rifles was at length heard far above us, showing that the Gurkhas had reached the top. A general advance was ordered and the position carried without much further opposition, but in which great loss was inflicted on the stubborn Tibetans, who eventually broke and fled towards Shigatse and Gyantse. Our further march to Gyantse was unopposed, and we arrived before the formidable fort at that place on the 11th April. The fort and town were surrendered into our hands the following day.

Gyantse is the third largest town in Tibet, 13,000 feet high, standing in a richly cultivated plain. The fort or jong at Gyantse is naturally very strong, built on an isolated rock 600 feet high, overlooking the town at its foot and the level plain all round, piled up with masses of towers and masonry something like Mount St. Michel in France.

It was found full of grain (which formed a welcome addition to our supplies) and other warlike stores. The surrounding plains were well irrigated, and at the time of our arrival the villagers were just commencing to sow their crops.

As the fort was a bad place to hold, without water and too large for our small force, the small hamlet of Chunglu, about 1,500 yards from it on the banks of the Nyan river, was selected for occupation by the mission, whilst the main gateway of the fort was demolished, and all grain and supplies removed to Chunglu.

The Viceroy, Lord Curzon, telegraphed:—"his warmest congratulations upon the success of the first part of the undertaking, and his grateful recognition of cheerfulness, self-restraint and endurance exhibited by all ranks in circumstances unexampled in warfare, and calling for no ordinary patience and fortitude."

Colonel Younghusband remained at Gyantse with an escort of six companies infantry, two 7-pounder guns, two Maxims of Norfolks, and 50 mounted infantry, under Lieut.-Colonel Brander, with sufficient transport for a small movable column to move out should it be required. General Macdonald returned to Chumbi on 19th April, arriving there in 9 marches on 27th, passing through two severe blizzards on the way back. The weather had, during March and April, become very unsettled with frequent snow storms, and although it was somewhat

milder, the transport which was unable to rest for a single day, had some severe strain working through the snow over slippery and slushy paths.

All went smoothly at Gyantse for two or three weeks, though the Tibetans showed no signs of negotiating, and it was not long before they recovered themselves, news being received that they were again assembling in considerable numbers.

Orders had been left with Colonel Brander to keep the Tibetans at bay should they recommence hostilities, and to keep them occupied in order to give General Macdonald time to obtain reinforcements, and make still further preparations for an advance on Lhasa, should this become inevitable.

Towards the end of April, Colonel Brander received news of a considerable gathering of Tibetans at the Karo pass, which they were fortifying, and as there was a short cut to Kangma from this place, which would threaten the communications with Gyantse, he determined to move out with his movable column and attack them, though the distance was 50 miles over an unknown road. The plan was a bold and hazardous one, and could hardly have been attempted against a more crafty enemy than the Tibetans. Colonel Brander moved out with a small column, and on the 6th May completely defeated an army of 3,000 Tibetans strongly posted in a splendid natural position, at a gorge just beyond the Karo pass, at an altitude of 16,400 feet. The fight was a severe one, and was at one time critical, as the position was too strong for frontal attack, and very difficult to turn. It was only captured by the splendid daring of some of our men who scaled precipitous mountains to a height of 19,000 feet, enabling a few rifles to bring an enfilade fire on the Tibetan walls, which were then evacuated by them, losing heavily in their retreat to Nagartse. We lost Captain Bethune, a most gallant officer of the 32nd Pioneers, and 18 men killed and wounded.

The Tibetans were not slow to take advantage of Colonel Brander's absence from Gyantse, as no sooner had he marched out than they rapidly moved up an army from Shigatse of some 2,000 men, and assaulted the post at Chunglu, now only held by some 80 rifles; attempting to surprise it on the early morning of the 5th May. The garrison, under Major Murray, 8th Gurkhas, were, however, on the alert, and the Tibetans were beaten off with heavy loss, leaving 200 dead round the walls of the post. Our small garrison was not strong enough to drive them out of the Gyantse fort, which again fell into their hands, and which they rapidly repaired, improving the fortifications. Thus, when Colonel Brander returned on 9th May, he found a cannonade going on against the Chunglu post from the jong, where several Tibetan guns had been mounted. From this time to the end of June, fighting went on almost daily round Gyantse, in which the 32nd Pioneers covered themselves with glory. The Tibetans were receiving large reinforcements, and were almost successful in completely investing Chunglu.

Colonel Brander was directed not to assault the jong, but to keep the enemy's attention concentrated at Gyantse and off our communications. He carried out his rôle admirably, never giving the Tibetans much breathing time, going for them on every possible occasion, and inflicting severe and heavy loss on them in several well-planned night attacks, when great courage was displayed on both sides. By the

assault and capture of the house known as the Gurkha post on 19th May, the capture and destruction of Tagu village on 20th May, the assault and occupation of Pala on 25th May, and several minor operations, the Tibetans were kept so busy round Gyantse that fortunately they left our communications alone. Only once, on 7th June, they attacked our post at Kangma, commanded by Captain Pearson, 23rd Pioneers; which, as bad luck would have it for them, had the previous night by chance an extra 50 rifles thrown into it, by escorts passing through. They were beaten off, leaving nearly 150 dead round the walls of the post. The severity of the fighting at Gyantse during this phase of the operations is indicated by our casualties, which were sixty-eight, including Lieutenant Garstin, R.E., killed in the breach at Pala, and four officers wounded.

Meanwhile, another period of intense strain had been laid on the transport behind, as not only had the advanced posts to be fed, but it became necessary to provide for the now almost certain advance to Lhasa; so a still larger accumulation of supplies had to be arranged for at Phari, Tuna, Kalatso, and Kangma.

Further difficulties owing to a bad breakdown of the Teesta valley cart road, and frequent landslips during the now rainy months in Sikkim had to be fought against, whilst an epidemic of cholera amongst the road coolies added fresh complications.

Reinforcements from India had been asked for and granted, and by the 10th June eight more mountain guns, 100 mounted infantry, half a battalion of the Royal Fusiliers, the 40th Pathans and 19th Punjabis, had arrived in the Chumbi valley, besides several sections of Field Hospitals, and large additions to our transport, which had been pushed up from time to time. A much needed officer in Colonel Read to command the long line of communications from Silliguri to Gyantse was appointed, besides several other additional staff officers.

At the commencement of June, the Tongsa Penlop, the ruling chief of Bhutan, came over with a considerable following, and paid a visit to General Macdonald in Chumbi. He soon became very friendly with the British, and was immensely impressed with our troops, afterwards accompanying the Expedition to Lhasa, where he was most useful as an intermediary between us and the Tibetans, helping a great deal in bringing them to reason.

Preparations for the final phase of the operations being completed, and the reinforcements from India having arrived, General Macdonald advanced in force to Gyantse, leaving Chumbi in two columns on the 12th and 13th of June. The first column consisted of 150 mounted infantry, 8 guns, 1,500 infantry, 950 transport drivers, and 2,200 mules; the second column of 500 infantry, 1,200 transport drivers, and 1,800 mules, and included the supply train.

The leading column reached Kangma on 22nd, and was there joined by the second column the next day, whilst a flying column was sent off to the east, to Niru to disperse a Tibetan force encamped there. The Tibetans, however, retired hurriedly before our column could reach them, notwithstanding they had built long walls and fortifications. They were probably only a small force, watching the road leading that way to Lhasa.

The Tibetans had at this time collected against us about 16,000 men, with some small cannon, and many jingals and wall pieces, whilst about 1,000 of them were armed with breech-loaders, and the remainder with matchlocks. They were distributed as follows:—At

Gyantse, 8,000; at Niani, holding the Kangma-Gyantse road, 800; at Niru, 15 miles east of Kangma, and guarding the Kangma-Ralung road, 800; at Gobshi, 18 miles east of Gyantse, and guarding the Lhasa road, 1,200; at Tsechen, guarding the Gyantse-Shigatse road, 1,200, with a support of 2,000 men at Dongste and Penam jong. All these bodies held strongly fortified positions, whilst a further force was at Nagartse, and the Karo pass, which was also strongly fortified.

They were thus split up on account of the difficulty of supplies, and we were consequently able to deal with them in detail, notwithstanding their great numerical superiority.

On 25th June, the march was continued from Kangma, and the enemy located holding the village and fortified monastery of Niani, 7 miles, south of Gyantse.

On the 26th, the enemy was attacked at Niani, and after a sharp action, in which there was a good deal of hand-to-hand fighting, and in which a portion of Colonel Brander's force from Gyantse participated, the Tibetans were defeated with considerable loss, our casualties numbering 16, including Major Lye of the 23rd Pioneers severely wounded.

That evening we crossed the Nyan river, and encamped some 2 miles south of Gyantse fort, out of range of the Tibetan guns, under whose fire, however, we came when crossing the river, the rear-guard only reaching camp at 11 p.m.

General Macdonald's next move was to drive the Tibetans from their Tsechen position, and thus open the fertile Shigatse valley, and the west side of the Gyantse plain to our foraging parties.

Accordingly, the force moved back to the left bank of the river Nyan on the 28th, Colonel Brander simultaneously occupying a village 3 miles down the river on the right bank on the same day by a night march, whilst a bridge was commenced over the river by Captain Sheppard, R.E., opposite our new camp, and some 2½ miles north of Gyantse.

The main body of the force swept the villages of the plain in the vicinity of Tsechen, which was found to be strongly held and fortified. Late in the afternoon the 8th Gurkhas and 40th Pathans gallantly assaulted and captured the position at Tsechen, most ably supported by our guns. The storming of the serrated craggy ridge by a company of 8th Gurkhas, led by Captain Bliss, was a fine piece of fighting, carried out in full view of the whole force. Our losses were only 10, including Captain Craster, of the 40th Pathans, killed, and Captain Bliss wounded—wonderfully small considering the difficult nature of the position assaulted and the stubborn resistance offered. Tsechen was occupied, the troops, who had had a long day, not returning to camp until about 10 p.m. These two victories at Niani and Tsechen, following immediately on the top of each other, severely shook the Tibetans, and caused them to send in a flag of truce on the 29th. Futile negotiations followed with the mission till 5th July, when active operations were again resumed, as the Tibetans had refused to evacuate the fort at Gyantse, which we had decided should be the first act of their good faith and desire for peace.

Plans were now formed to take the jong, which was then held by about 6,000 Tibetans. It was a very difficult place to assault, and we anticipated it would take us some days to capture it, and that probably we should lose a good many men in the operation.

General Macdonald decided to attack it from the south in the small hours of the morning of 6th July, after making a feint on the north side, on the afternoon and evening of the 5th July.

Accordingly on the afternoon of the 5th July a strong demonstration was made against the enemy's defences on the north-west of Gyantse, and by nightfall our troops had crossed the river and captured and occupied a village about a mile from the town. Every endeavour was made to induce the enemy to think that we should attack from the north; but as soon as night was well on our troops were withdrawn from that side, and the whole force quietly marched back, recrossing the river at midnight to our old camp south of Gyantse. At the same time three assaulting columns with demolition parties were placed in position to assault the southern portions of the town at 3 a.m. and effect a lodgment by daylight. This operation was successfully carried out, and although the Tibetans were not actually surprised, and our explosion parties were met by a desultory fire on their approach to the walls of the town, the bulk of the enemy were not there. Holes in the walls were blown down, and by daylight we had effected a strong lodgment in several houses on the southern part of the town, Lieutenant Gurdon, a very gallant officer of the 32nd Pioneers, who had several times before distinguished himself by leading assaulting parties, being killed, much to everyone's regret. As soon as it was light enough to see, the Tibetans became thoroughly aware of the direction of our main attack, and every gun, jingal, and matchlock they possessed kept up an incessant fire on any of our men they could see during the whole morning. By noon, however, our troops under Colonel Campbell, D.S.O., of the 40th Pathans, in command of the assaulting columns, had made good their position in the town, a considerable part of which was now in our possession, whilst the concentrated fire of our 12 guns had not been without its effect on the defenders of the jong, as over 600 shells were thrown into the place. Towards 2 p.m. Colonel Campbell signalled to the General that he thought he could capture the jong by assault if a breach were made in the curtain of a high wall on the face of part of the rock which was more accessible and less precipitous than elsewhere.

The fire of our 10-pounder battery was therefore concentrated on this wall, and after some wonderfully good and accurate shooting a breach about 12 feet wide was made, by which a few men at a time might enter. It fell to the 8th Gurkhas to have the honour of leading the assault up a most difficult piece of climbing, supported by the Royal Fusiliers; and right well and gallantly they did it, led by Lieutenant Grant, 8th Gurkhas, who, although hurled back by a stone as he had reached the breach, again doggedly led on his men, and gained for himself the well and hardly won Victoria Cross. As soon as our troops gained the breach the Tibetans became disheartened, and fell back, and finally broke and fled from the fort as fast as they could. They had fought stubbornly and well; but the superiority of our guns and fire had been too much for them, whilst their losses had been very heavy. All honour to them for standing up for 14 hours against the concentrated fire of 12 guns, 10 Maxims, and some 2,000 Lee-Metfords. Our expenditure of ammunition had been heavy, and we had some anxiety that we should not reach Lhasa if we were to have many more such actions, for fresh supplies of ammunition could not be obtained from India under two months.

We were much pleased at receiving the congratulations of the Viceroy and Lord Kitchener on our success, which had been accomplished with extraordinarily small loss to ourselves; the assault on the jong only costing us 37 casualties, including 1 officer killed and 7 wounded, or about 2¼ per cent. of our small force.

During the next few days the Tibetans retreated towards Lhasa and Shigatse, and into the Rong valley, but showed no signs of negotiating.

An early advance on Lhasa as the only means of bringing the Tibetans to their senses became imperative. Details having been settled, the Lhasa column, under General Macdonald, accompanied by Colonel Younghusband and the mission, consisting of 200 mounted infantry, 8 guns, 80 sappers, 900 infantry and 6 Maxims, with 2,000 transport drivers and 3,900 mules, carrying 23 days' rations, set out from Gyantse on the 14th July, leaving a strong garrison at that place fully equipped for any emergencies.

The weather had now become most inclement, with constant rain, turning to sleet and snow above 15,000 feet.

The column marched up a narrow valley to Ralung, which was reached on the 16th, and it was ascertained that the Karo pass, 12 miles beyond, was strongly held by the Tibetans. The following day the force camped under an immense glacier near the summit of the Karo pass, 16,400 feet, flanked by huge snow-capped mountains on either side. The Tibetans occupied an extremely strong position some two miles beyond the pass, where the valley descending to the Yamdok lake became very constricted, with precipitous mountains rising on either side to 20,000 feet and over. On one side these were absolutely inaccessible, whilst on the other or eastern side they were only climbable by the best mountaineers. On the 19th dispositions were made to attack the place, but the heart of the Tibetans had failed them, and the majority of their Army had retreated during the night, leaving only about 1,000 ill-armed levies to hold the eastern heights overlooking the gorge. These men fired on us on our approach, and the Gurkhas were sent up the mountains to between 18,000 and 19,000 feet to clear them off, which they effectually did after 4 or 5 hours' climb, driving the Tibetans off over lofty snow-fields 20,000 feet high, where it was impossible to follow them. Our march continued the next day to Nagartse jong, on the shores of the enormous and curious Yamdok or Palti lake. Here a day's halt was made. The fort, in which were found some 5,000 bags of grain and flour (forming a most welcome addition to our supplies), was taken possession of and garrisoned.

Our force then followed the shores of the Yamdok lake past Pete jong for some 25 miles, till the foot of the Kamba pass was reached. This pass (16,500 feet) was crossed without further opposition on 24th July, on which day I rode on with the whole of our mounted infantry, descending into the Brahmaputra valley, and was able to seize two large Tibetan ferry-boats at Chaksam, the possession of which greatly facilitated the passage of the Brahmaputra or Tsangpo river.

The descent from the Kamba pass to the valley of the Brahmaputra is very steep, being 4,000 feet in 4 miles. The valley was found most fertile with many villages surrounded by trees, whilst the wheat, barley, pea, and bean crops were rapidly ripening. It appeared a land flowing with milk and honey after the barren wastes we had

recently traversed. The Brahmaputra at this point is a rapid and deep river, nowhere under 120 yards wide, and often in flood time, which was now approaching, nearly a mile across. We had only brought 4 small 12-foot Berthon boats with us, and the Tibetans had hid away all other boats, except the two large ones which we fortunately captured before they could make away with them, and with which they were busily employed in crossing the remnants of their Army when we surprised them, large numbers of whom were seen flying on the other side of the river.

The crossing of the river was a formidable operation, and took 7 days' strenuous work to accomplish. To the great regret of everyone Major Bretherton, D.S.O., our Chief Supply and Transport Officer, was drowned by the swamping of a Berthon boat whilst crossing the river on the 28th July.

We were able to continue our march to Lhasa on the 31st July, leaving the Brahmaputra, some 5 miles beyond the point of crossing, and following the right bank of the Kyi river until Lhasa was reached.

Several high Lhasa officials had visited Colonel Younghusband at Nagartse, Demalung, Chaksam, and other points between the ferry and Lhasa, all endeavouring by every promise to prevent us proceeding to Lhasa, and saying they did not want to fight any more. We halted at Trilung Bridge, 6 miles short of Lhasa, on 2nd August, the shining roofs of the Potala being distinctly visible. We reached the Holy City itself on the 3rd August, on the very day General Macdonald had informed the Government of India we most likely should be able to, to find that the Delai Lama and fled with Dorgieff 10 days previously towards Mongolia, leaving the affairs of State in the hands of the Regent and Council. Camp was pitched and fortified on the banks of a meandering stream, 2 miles to the west of the Potala, on which hill is built the magnificent monastic castle of the Delai Lama, the ruler of Tibet. The town of Lhasa itself lies embedded in trees a mile beyond the Potala, and is not seen by the traveller approaching from the west until either the Potala or Medical Temple Hill, which are joined by a narrow ridge, are surmounted or passed. For the next few days complimentary visits were exchanged between the Tibetan officials and the Chinese Amban, and ourselves.

The Tibetans now expressed a desire for peace and a willingness to negotiate, praying that their holy places might be spared, a prayer which was readily acceded to, as their monasteries and villages had been most religiously respected, and very strict orders against pillage had been issued; so that beyond the few places in the vicinity of Gyantse itself, which had to be taken by assault, and which offered armed opposition to us, their towns and monasteries had suffered no harm at our hands, whilst all supplies, etc., we had from time to time required had been most scrupulously paid for at high rates on the spot. The news of our arrival at Lhasa was sent off to India on the afternoon of 3rd August, by despatch riders, to Gyantse, where the telegraph wire now reached, reaching London in 70 hours. The force was much gratified at receiving some days subsequently the congratulations of His Majesty the King Emperor, as well as those of the Viceroy (Lord Amphill), Lord Roberts, and Lord Kitchener.

Some pressure had to be brought to bear on the big monasteries at Lhasa to obtain supplies, and a small force of Tibetans in the vicinity was dispersed without further bloodshed, 80 being

captured. Negotiations then proceeded slowly but peaceably, though a threat to resume military operations had to be made before the Tibetans finally came to terms. Colonel Younghusband was then able to make a most satisfactory treaty with the Tibetans, which was duly signed at the Potala on 7th September, with great pomp and ceremony. We spent 7 weeks at Lhasa, and after the inhabitants had become accustomed to us, were able to freely visit the town and other holy places. The lay-inhabitants became most friendly, and great bargainings for food and curiosities went on daily outside our fortified camp.

Time will not admit of my giving you a full description of Lhasa, and I must limit my remarks to saying that we were all somewhat disappointed with the town itself, which is small in size, situated on low ground, and surrounded by swamp. The Jhow Khang and other large temples in the town, though intensely interesting and old, and filled with a wonderful and extraordinary collection of images and frescoes, do not outwardly strike the eye, or attract much attention. The houses are mostly two-storied, and solidly built of stone with flat roofs. The Delai Lama's palace, however (the Vatican of Central Asia), built on the Potala Hill, fully came up to all expectations. It is a massive and magnificent pile of buildings, surmounted by 5 Chinese pagoda-shaped gilt roofs, which will ever remain engraved on the memories of those who have seen it. The rocky hill on which it is built is about 600 feet high, standing in the middle of a smiling and cultivated valley, with the wide and pellucid Kyi river flowing near by, whilst lofty and rugged mountains descend on all sides to the valley, 2 or 3 miles off. The enormous monasteries of Debung and Sera, containing respectively 10,000 and 5,000 monks close by Lhasa, under the northern hills, were also very impressive.

As was to be expected in a priest-ridden place like Lhasa, more than half the population were Lamas or monks, whilst women, who carried on a good deal of the trade of the place, preponderated in the other half.

For a further description of Lhasa and details of this most interesting expedition I would recommend anyone to read Colonel Waddell's most instructive book on "Lhasa and its Mysteries," which gives an excellent description of the expedition, from its commencement to its successful termination.

Our return march to India commenced on 23rd September, by which time autumn was coming on apace, and there was frost at nights at Lhasa. A touching incident occurred as General Macdonald was leaving Lhasa, when the Ti Rimpoche or Regent caught up the column on the march and asked to see the General. The request being granted, he called down the blessing of Buddha on the General, at the same time presenting him with a small golden image of "The Master," thanking him for his humanity, and praising the discipline and conduct of our troops. After mutual expressions of goodwill, and the Regent hoping he would hear from General Macdonald of his safe arrival in India, the old man bade us farewell in the most friendly manner, and retraced his steps to Lhasa. We recrossed the Brahmaputra at Parte, an easier crossing 9 miles higher up, than at Chaksam, dropping down to the Yamdok lake by the Nubska pass, 16,800 feet high.

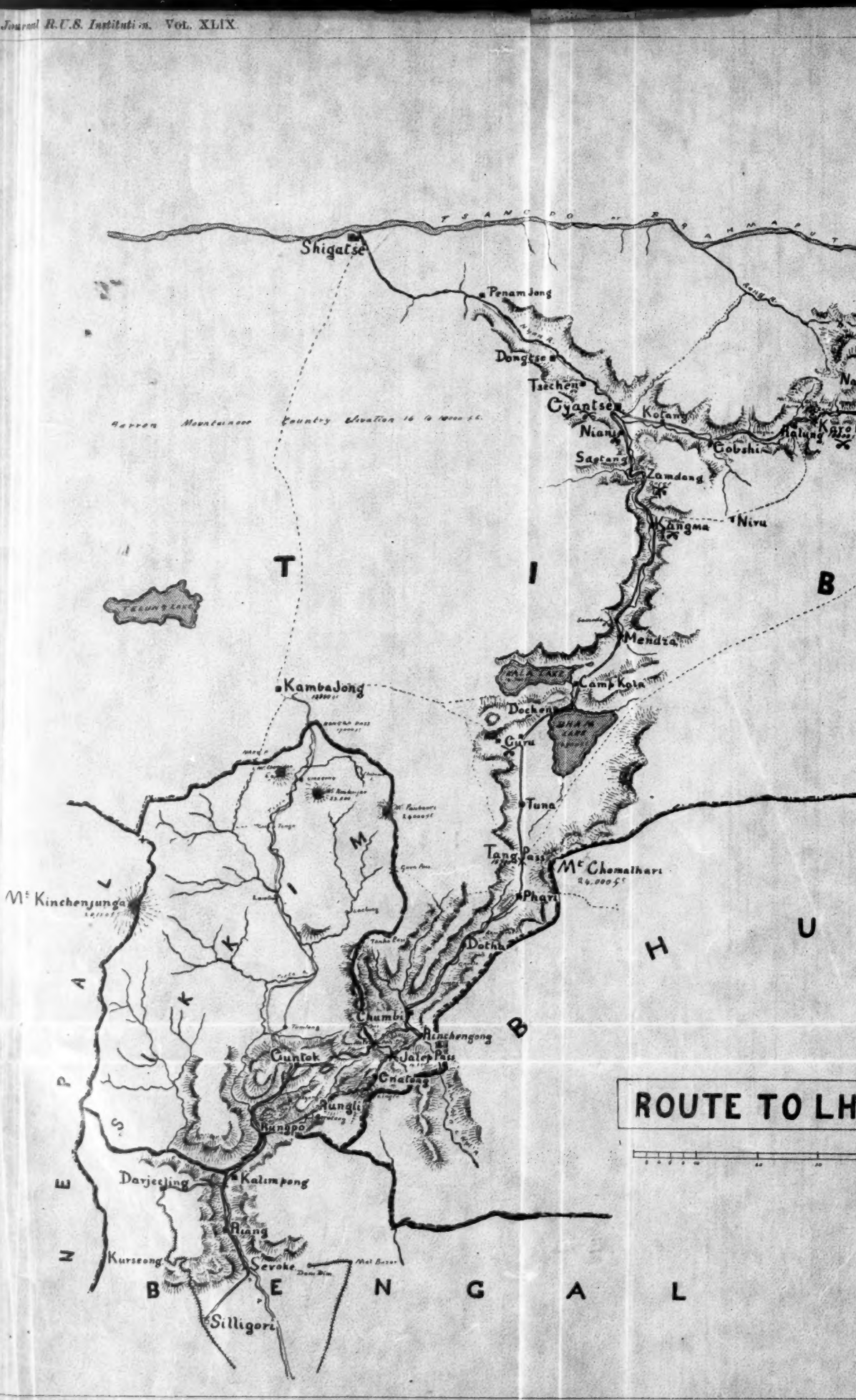
The last column reached Chumbi on 19th October without further incident of much note, beyond our experiencing a severe blizzard on the Tang pass, and 27 hours' heavy snow at Phari, which compelled us to halt for a day and caused a great deal of hardship and discomfort to the troops, with some 200 cases of snow blindness; thus proving we had not left Lhasa a day too soon. The Force was also much gratified at receiving news that His Majesty the King had graciously signified his intention of granting a special medal for the campaign.

From Chumbi the troops were rapidly demobilised, joyfully returning to their stations in India after a year's campaigning in great hardships at an average elevation of 14,000 feet in an unparalleled and most extraordinary country, where supplies were very scanty, and even fuel to cook the men's food had often to be carried and doled out with extreme care.

I cannot speak too highly of their fortitude and discipline under the most trying circumstances, unexampled in the previous history of warfare; and it speaks volumes for the training of the Indian Army, that our losses were so insignificant during the severe fighting that took place round Gyantse. Our war casualties only amounting to 5 officers killed and 19 wounded, with 32 killed and 148 wounded amongst the rank and file. The total force employed by the British in the campaign was:—

No. 7 British Mountain Battery, six 10-pounder guns (Major Fuller).
Section No. 27 Native Mountain Battery, two 10-pounder guns (Lieutenant Field).
Section No. 30 Native Mountain Battery, two 7-pounder guns (Lieutenant Marindin).
Gurkha guns, four 7-pounder guns (Captain Leeke).
1st Company Mounted Infantry (Captain Ottley).
2nd ,, ,, ,, (Captain Peterson).
3rd ,, ,, ,, (Major Rowlandson).
3rd Company Bengal Sappers and Miners (Captain Sheppard, D.S.O., R.E.).
12th Company Madras Sappers and Miners (Major Heycock, R.E.).
Headquarters Wing 1st Royal Fusiliers (Colonel Cooper, D.S.O.).
Machine gun section Norfolk Regiment (Lieutenant Hadow).
Machine gun section Royal Irish Rifles (Lieutenant Bowen Colthurst).
19th Punjabis (Major Herbert).
23rd Sikh Pioneers (Lieut.-Colonel Hogge).
32nd Sikh Pioneers (Lieut.-Colonel Brander).
40th Pathans (Lieut.-Colonel Campbell, D.S.O.).
8th Gurkhas (Lieut.-Colonel Kerr).
12 sections Field Hospital and 1 Base Hospital.
Telegraph and Postal Detachments.
10,000 transport drivers.
8,000 supply and transport coolies.
10,500 mules and ponies.
400 donkeys.
9,225 bullocks and yaks.
The whole force with 230 British officers.

The CHAIRMAN (Major-General Sir J. Wolfe Murray, K.C.B., R.A., *p.s.c.*, Master-General of the Ordnance):—I think we are greatly indebted to Colonel Iggulden for the admirable and lucid description which he has placed before us this afternoon of what was possibly one of the most remarkable expeditions which our troops in India have been called upon to undertake and carry through. That is a wide statement to make, seeing the varied character of the work which from time to time falls to the lot of our Army in the East; but I venture to think you will agree with me, it is not beyond the mark. We are further indebted to the lecturer for having drawn our attention to the purely military aspect of this expedition, because I fear that this important aspect has been somewhat in danger of being obscured or eclipsed by the fiercer and more brilliant light which has shone upon the political phases of this singular undertaking. You are all of you no doubt familiar, through the columns of the public Press, with the political side of this question, and I have no intention here of touching upon it; but Colonel Iggulden has done a great work in endeavouring to place before us the details of this military exploit, as he has very justly termed it. He has taken us, as well as the time at his disposal has permitted (and it is no easy matter to condense a year's campaigning into an afternoon's lecture), through the various episodes of the expedition, and has graphically described to us the fighting which took place. You will have noticed from the admirable photographs how formidable a matter the storming of a Tibetan jong must prove, even when held by indifferently-armed though determined antagonists. But I am sure that the lecturer and those present who took part in the expedition will acquit me of any desire to belittle their deeds when I say that the actual fighting—tough though it was—was not the most serious nut that had to be cracked. The administrative difficulties were very great indeed, and it redounds enormously to the credit of Sir Ronald Macdonald, and to those who were associated with him, that these difficulties were so successfully overcome. At the risk of traversing again some of the ground which the lecturer has already taken us over, I should like to draw attention to some of them. In the first place, the line of communications was of great length, the distance from Silliguri, the railhead in Bengal, to Lhasa being somewhere about 400 miles—a distance approximately equal to that from London to Aberdeen. That in itself is a sufficiently formidable obstacle; but it is vastly more formidable when the nature of the country is considered. Instead of the comparatively level character of our own country, the route traversed by the expedition ran along a gigantic switchback, as the altitudinal section upon the map has shown you. Starting from a little above sea-level at Silliguri it rises abruptly from Rongli (situated on an affluent of the Teesta river) to the Jalep pass, over 14,000 feet above sea-level; thence it descends again to 9,000 feet at Chumbi, rising again to nearly 16,000 feet at the Tangla, whence there is a more gradual descent to about 13,000 feet at Gyantse. From the latter there is some further switchbacking over passes upwards of 16,000 feet above sea-level till Lhasa is reached at an altitude of some 9,000 feet. Campaigning at these altitudes must be accompanied by great difficulties and no little hardships. You will doubtless have noticed that snow and ice were no uncommon feature in the photographs—a very different state of affairs from what is usually associated in the lay mind with Indian soldiering. Again, as the lecturer has pointed out, the difficulties of supply and transport were immense; supplies, even including fuel, were hardly procurable in the country, and the transport had all to be imported. I should like particularly to draw your



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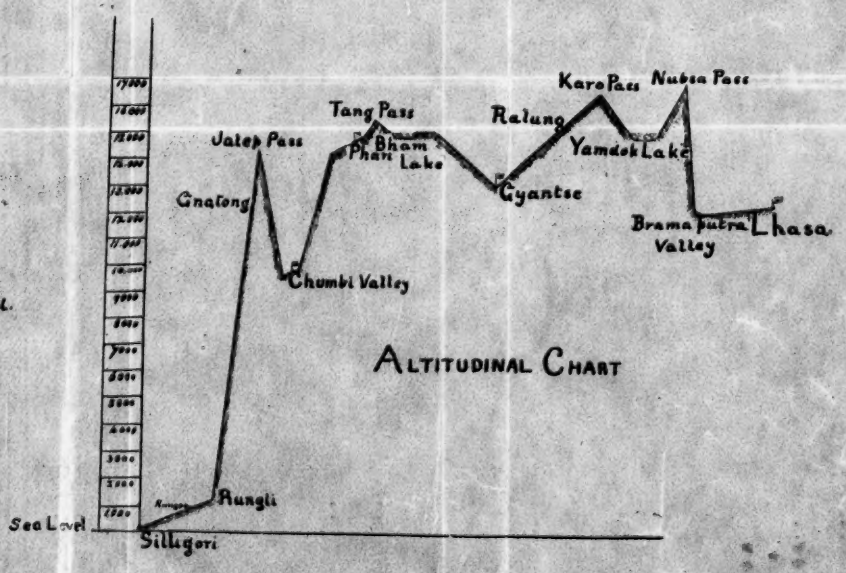
LHASA.

H. H. Iggulden Lt. Col.



ALTITUDINAL CHART

attention to the diversity of transport employed. In the lower Teesta valley, where the road permitted, carts drawn by bullocks were utilised; coolies were employed probably on the stiffer climbs up to and over the Jalep pass, mule-pack transport in the Chumbi valley and onwards; and by a stroke of genius General Macdonald placed a number of Punjabi ekkas to run upon the stretch of plateau country between Tuna and Gyantse. The working of a line of communication upon conditions so varied as prevailed in this expedition is an administrative feat of no ordinary magnitude, and one which redounds greatly to the credit of all those concerned. The opportunity to conduct such expeditions as these, which are experiences more or less frequent in our Eastern dominions, gives to India its great value as a military training ground, and as a school for the art of war. We have heard of late years the abilities of our officers rather too frequently decried; but I think you will agree with me that difficulties such as were surmounted in this expedition are not to be overcome except by the ability and determination which have characterised our officers in the past, and which I firmly believe—whatever may be said by irresponsible critics—will characterise them in the future. These officers, who are represented by some as barely able to spell their own names, have carved and are carving, those names indelibly all over the surface of the globe. I esteem it a great honour that I should have been invited to take the Chair upon this occasion, and it has given me particular pleasure to do so, and thereby to renew, so to speak, associations with those gallant Sikh pioneer regiments which bore so conspicuous a part in Tibet. I had the good fortune to serve with them upon a mimic campaign not long before they proceeded upon this expedition, and I have naturally watched their progress with interest. In specially mentioning these regiments, I trust you will understand that I have no desire or intention of disparaging their comrades, with whom I had not the good fortune to be acquainted; and I am sure I shall express the feelings of every one here present when I say that our heartfelt sympathies go out towards the gallant Gurkhas, at this time more especially, in view of the recent disaster which has befallen some of those brave and cheery hillmen at Dharmsala. In conclusion I will ask you to allow me on your behalf to give to Colonel Iggulden a very cordial vote of thanks for the lecture to which we have all listened with so much interest; and will you allow me to express also your congratulations upon the admirable manner in which it has been delivered, for he has spoken without one single note, and without hesitation, as you will have observed.

MANUAL OF INSTRUCTION IN FIELD WORKS FOR THE JAPANESE INFANTRY.

(*6th Edition, 1902.*)

Translated from the Russian by the General Staff, War Office.

NOTE.—The Manual was translated into Russian from the 6th Japanese Edition, dated 14th April, 1902, under the Editorship of Colonel Adabash, of the Russian General Staff, and issued 13th May, 1904. It has been re-translated by the General Staff, War Office.

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I.

General Rules.

1. Every soldier must be acquainted with the method of construction of the simpler kinds of field works.

2. The more complicated works are carried out under the superintendence of Engineers.

3. Troops are taught the construction of field works during the training season and at manœuvres.

4. Engineer non-commissioned officers and sappers in their third year of service are attached to every unit of infantry.

5. The Engineer detachment march at the head of the advance guard for the purpose of repairing the roads.

6. A detachment of Engineers must be detailed to repair roads and bridges in an advance and to destroy them in a retreat.

Object of Field Works.

7. The chief object in constructing trenches is the protection of the firing line. The construction must be simple, capable of being rapidly carried out, and should be masked on the enemy's side.

Some Rules for Field Works.

8. The topographical conditions and nature of the soil must be considered, and trenches constructed in accordance with them.

9. A good field of fire must be assured; for this reason they should be constructed, if possible, on ground commanding the enemy's advance.

10. Behind the first line of trenches there must be a second line for the reserves.

11. Trenches should be laid out under the supervision of Engineer officers.

Penetration of Rifle Bullets into Various Materials.

12.

	Metres.
Sand	0·75
Clay	1·75
Pine	1
Soft Wood	1·3
Metal (*sic*)	0·015
Brick	0·2
Snow	2
Lime Concrete	0·15

Entrenching Tools.

13. Every company of infantry has 98 tools:—

Small Spades	68
Small Picks	17
Small Axes	8
Chisels	5

The field work equipment of a battalion of infantry is carried on 72 pack horses; the number of tools is four times that carried by a company. A regiment has three times as many as are carried by a battalion.

14. Entrenching tools are divided into those which are carried by the men and those carried on the pack animals.

In the equipment of every battalion the following must be carried for constructing bridges:—Squares, sawyers' dogs, levels, axes, nails, and 48 large spades.

Points to be Remembered.

15. Parapets must not be constructed of dusty earth. The construction must be of the simplest nature and quickly carried out; natural positions must be made use of, if such exist.

16. Before commencing to dig, the positions should be reconnoitred with the help of maps.

Entrenchments.

17. Entrenchments should comply with the following conditions:—

a. The parapet must be bullet-proof.
b. The field of fire must be good.
c. Trenches must not be an obstacle to an advance.
d. Methods of construction must be simple.

18. The length of front allotted to each man should be 0·65 metre; but the total length of a trench for a company is left to the discretion of the company commander.

19. Trenches are for the three kinds of fire, viz., for lying down (Fig. 1), kneeling (Fig. 2), and standing (Fig. 3). The mean height of the parapet for lying should be 0·35 metre, for kneeling 0·6 metre, and for standing 1·2 metre. The width of the ammunition berm 0·1 metre (Figs. 3, 4, 5, and 6). This berm serves also as a step for leaving the trench.

On high positions or on the summit of a hill, for fire standing, trenches as in Figs. 5 and 6 are used to cover the firing line. Dimensions are given on the Figs.

20. If a trench is to be occupied for a long period, the dimensions may be increased and the profile improved as in Figs. 7 and 8. To cover a larger area with the fire, the trench shown in Fig. 8 should be used, as it has a higher command.

21. In laying out trenches, entrenching tools may be used as units of measurement.

22. The length of the small portable spade is 0·5 metre, so that three of them make 1·5 metre. The large spade carried in the pack transport is 1·2 metre long (Fig. 9); the length of three such spades, with the length of the pick-head added, is 4 metres (Fig. 10).

23. On the order "Commence," the men take up positions along the line traced for the entrenchments and begin to throw up the parapet, leaving a berm; this is afterwards covered up (Fig. 4). Where the ground is saturated with surface water a drain must be constructed to carry it off (Fig. 4). Special attention must be paid to this.

24. The time required for preliminaries, taking off equipment, placing the men along the cutting line, etc., is from 15 to 20 minutes.

25. If the trench is constructed with 3 or 4 faces, traverses should be built, 3 to 4 metres thick, as shown in Fig. 11.

26. The rapidity with which a trench can be constructed depends upon the nature of the ground.

27. Time taken to construct trench for fire lying is 15 to 30 minutes; for fire kneeling, 30 to 60 minutes; and for fire standing, 45 to 90 minutes.

28. Should cover be required quickly and the ground prove too hard, then a position must be sought for where the ground is softer.

Splinter-Proofs.

29. If time permits, splinter-proofs should be constructed over the trenches, for protection from the splinters of bursting shells and shrapnel (Figs. 11, 12, 13, and 14). Fig. 15 shows a splinter-proof, the exits of which can be closed by wooden shields.

30. The height of a splinter-proof must be sufficient to accommodate men sitting.

Adaptation of Trenches to the Ground.

31. The utilisation of all natural cover facilitates the rapid construction of trenches.

32. The utilisation of depressions in the ground is shown in Figs. 16 to 21.

If it is impossible to dig trenches in a hollow or depression, they should be constructed in rear of it.

33. If there are hedges or bushes, the line of trenches should be constructed behind them. (Fig. 23.)

34. If there is a wood fence, the fire-trench should be made one pace in rear of it. (Figs. 24 and 25.)

35. The fence should have either a separate loop-hole for each rifle or a continuous longitudinal loop-hole.

If there is a wall, the height of which exceeds the height that a man can fire over, a banquette should be made (Fig. 27); if, however, the height is less than this, the trench should be dug behind the wall, but the earth thrown up against the front. (Fig. 26.) If the height of the wall is very great, it may either be loop-holed (Fig. 28) or a platform made for the firing line (Fig. 29).

36. Bushes afford a very good means of masking trenches.

37. An abattis may be made as an obstacle in front of a line of trenches, but care must be taken that the branches do not interfere with the line of fire.

38. Ruined houses or walls may be used as defences as may seem suitable.

Artificial Obstacles.

39. To impede the enemy, artificial obstacles may be constructed in front of the trenches.

Trenches should be made 50 to 100 metres, in front of the general line, for use at night by outposts.

40. To construct an abattis, trees are felled to fall in one direction, and the branches fixed to the ground by means of forked pickets. (Fig. 30.)

41. Another method is to lash small branches to cross logs (Fig. 32). The branches are laid in the direction of the enemy and inclined upwards by placing them in a ditch. (Figs. 30 to 32 show several kinds of abattis.)

42. A more effective obstruction to the movements of the enemy is wire entanglement, which is made as follows: — Stakes about 1·5 to 2 metres long by 0·05 to 0·1 metre in diameter are driven into the ground in a chess-board pattern, and are then connected, top and bottom by wire. (See Fig. 35.)

43. To mask this obstacle, the stakes should be painted black.

44. Barbed wire may be used for the above entanglements.

Entrenchments in the Attack.

45. In the attack of a position held by the enemy, entrenchments of the nature shown in Fig. 36 are made.

46. The approach to the enemy's position is made by the use of cover up to the place from which the final charge is to be made.

47. The approaches are made in zigzags.

48. At night, patrols are sent out in front of the trenches.

49. The reserve should be placed under cover behind but near the front line.

50. At night the most useful trenches are those shown in Figs. 4 to 8.

51. The trench in which the troops are formed up for the final charging is constructed as in Fig. 4, with width at bottom of about 1 metre.

52. If water has to be crossed during the advance, the arrangements for getting the men over it must be thought out in good time.

53. An officer or non-commissioned officer Engineers must be attached to every infantry unit.

54. During the execution of field works there must be no unnecessary noise, and all orders must be given in a low voice.

55. The lighting of torches and fires when working at night should be avoided.

56. On completion of the entrenchments the tools used must not be left about, but returned to Stores.

II.

Bridging.

57. Infantry must be acquainted with the method of construction of the simpler kinds of bridges for crossing streams, ditches, and slight obstacles.

58. The maximum depth of a ford for infantry is 0·8 metre, for a wagon 1 metre, for guns 0·6 metre.

59. There are various methods of constructing passages, which depend upon the material at hand and topographical features.

60. The simplest method of crossing is by means of a raft of two boats connected by a wooden framework. (Fig. 37.)

61. If the width of the stream is not great, two baulks can be laid across the stream and cross timbers laid on them; on these again, planks should be placed lengthways. (Fig. 38.)

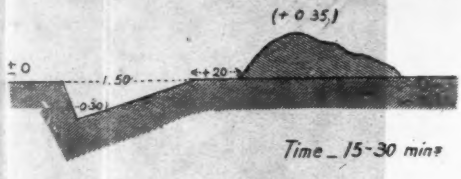
62. If the stream is of considerable depth, the following method can be adopted to get the baulks across: a pole is placed on end with another made fast to its top end; the vertical pole is then used as shears to launch the horizontal one on to the other side, as shown in Fig. 40.

Another method is to fish or lash two logs together and launch them across over the trunk of a tree placed as a roller. (Fig 39.) If the width of the stream is considerable, a bridge of the type shown in Fig. 38 requires an intermediate support, either vertical poles, trestles, or frames, as shown in Figs. 41, 42, and 43. In boggy places, gabions can be used to support the bridge, one to six of them being used in each pier. (Fig. 44.) In shallow places the longitudinal banks can be supported by trestles made of several timbers lashed together.

63. Soft marshy places, across which a detachment has to pass, should be covered with rubbish or other material, and proper arrangements made for draining away the water at the sides. If time is limited, logs can be thrown down and planks placed on them.

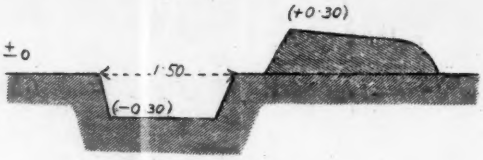
Dimensions in Metres.

Fig. 1.



Time _ 15-30 mins

Fig. 2



Time 30-60 mins

Fig. 7.

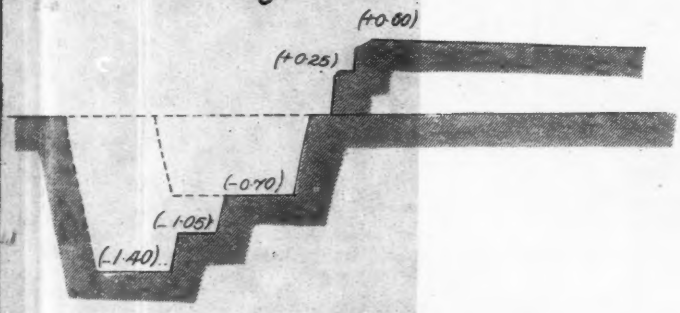


Fig. 8

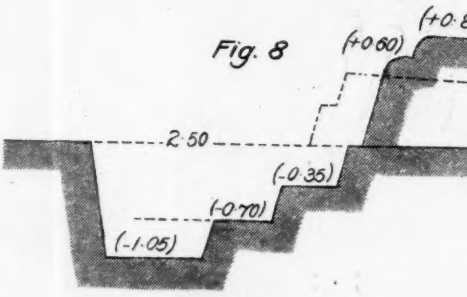


Fig. 13.

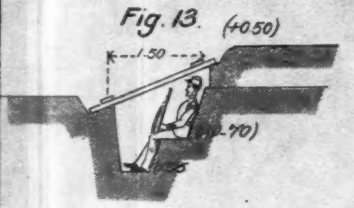


Fig. 14.

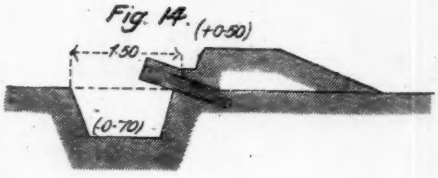


Fig. 15.

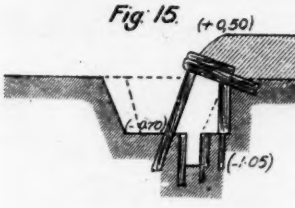
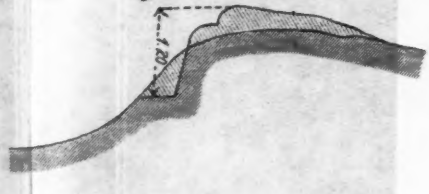


Fig. 20.



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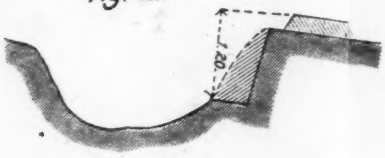
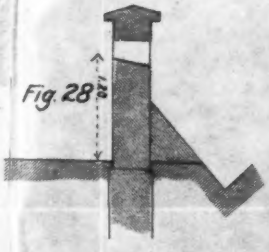


Fig. 22.

Fig. 28.



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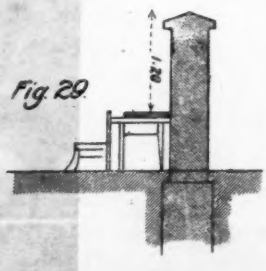
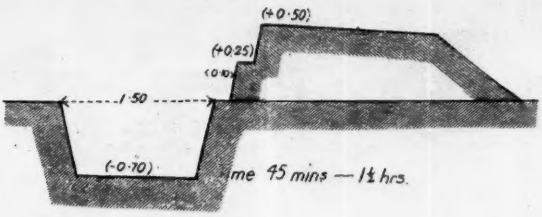
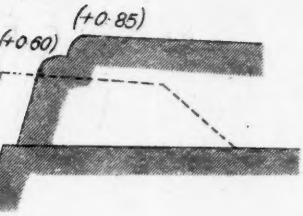


Fig. 30

J. J. K. & Co., Limited, London.

Fig. 3.





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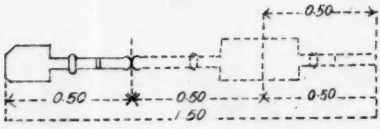

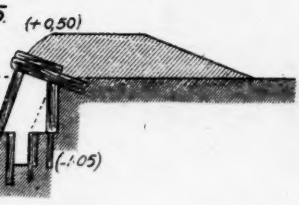

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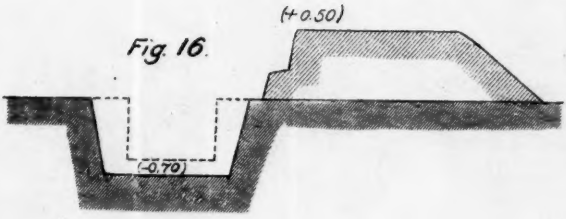
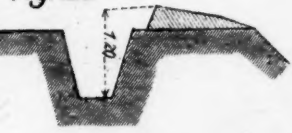


Fig. 22.



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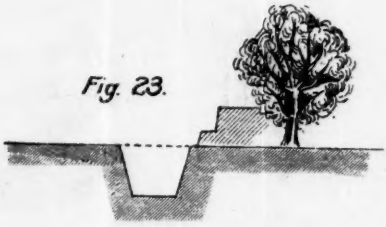


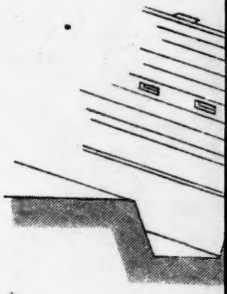
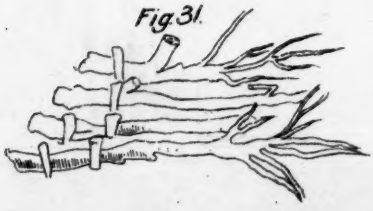


Fig. 31.



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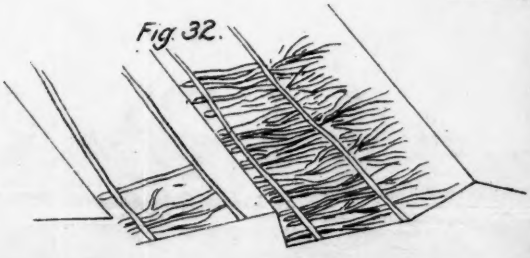


Fig. 4.

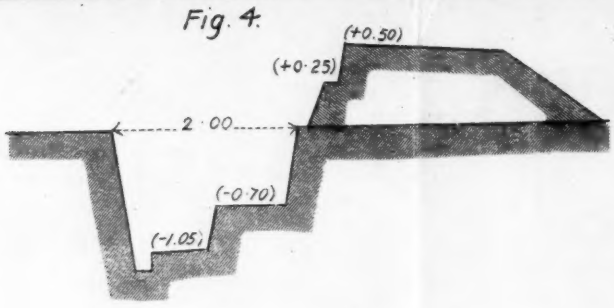
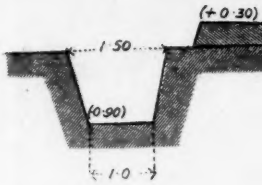
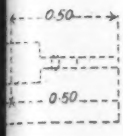


Fig. 5.





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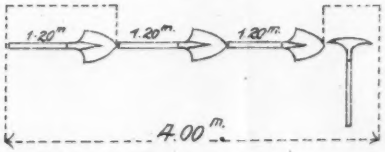


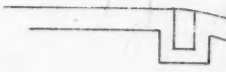


Fig. 11.

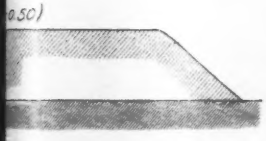
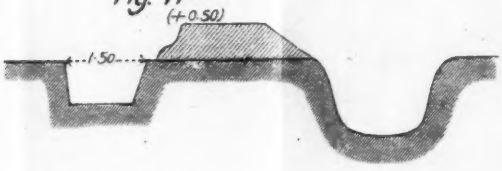


Fig. 17



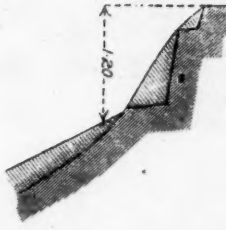


Fig. 24.

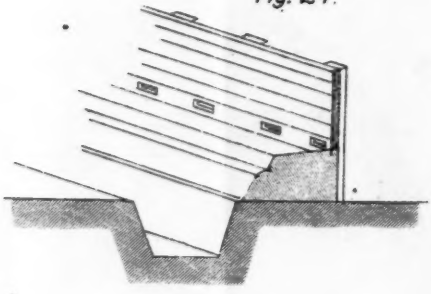


Fig. 25

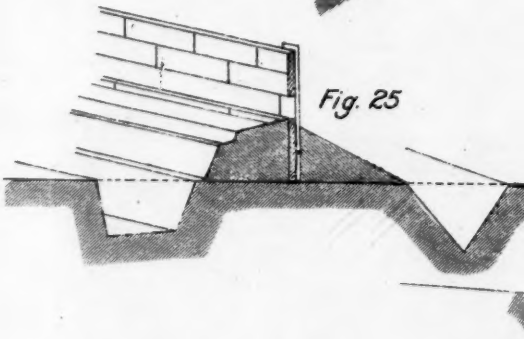
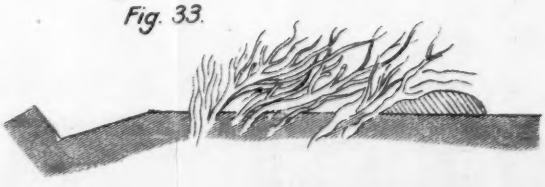


Fig. 32.

Fig. 33.



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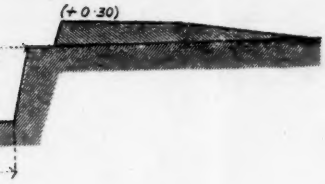

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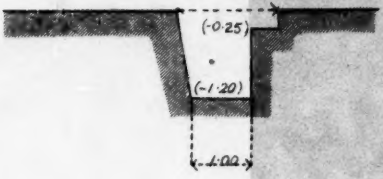


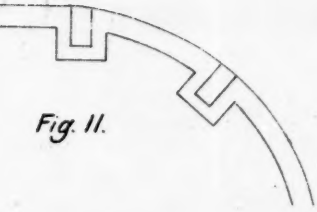
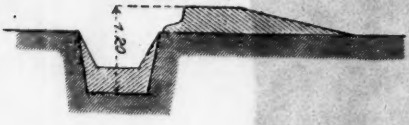


Fig. 11.

Fig. 12.

Fig. 18.

Fig. 19.



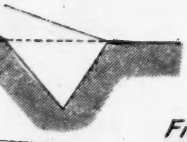


Fig. 26.

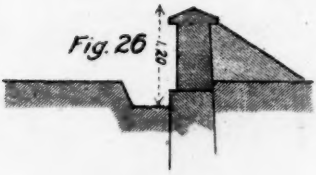


Fig. 27.

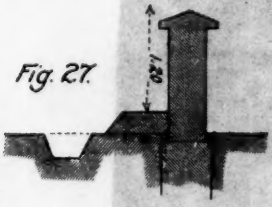
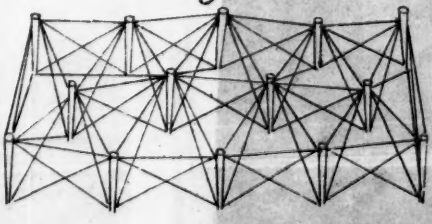


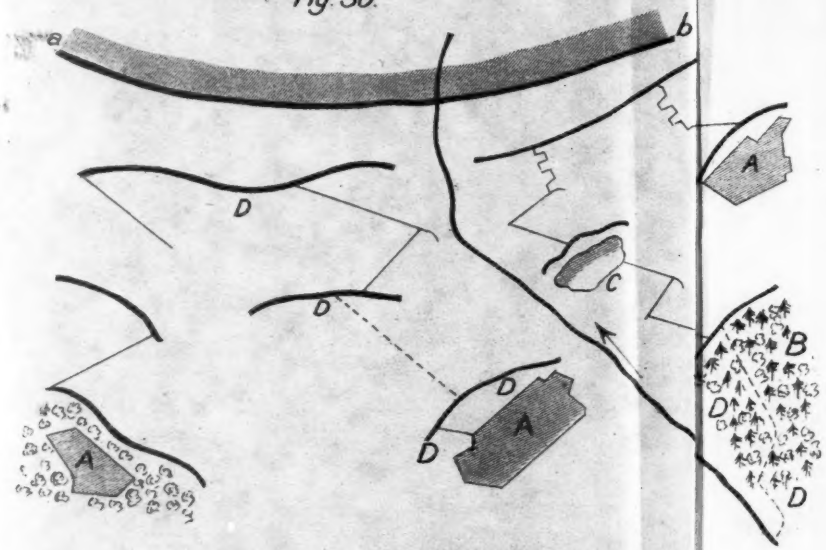
Fig. 34.

Fig. 35.



Dimensions in Metres.

Fig. 36.



a b = line of attack.

A = position of village.
B = pine wood.
C = hill.
D = line of trenches, ambuscades, etc.

Fig. 37.

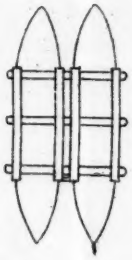


Fig. 49.

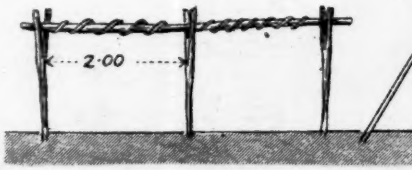


Fig. 47.

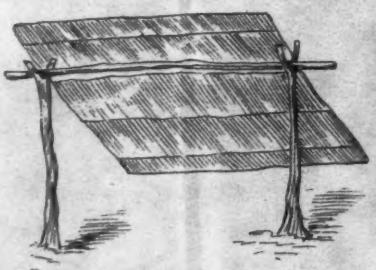
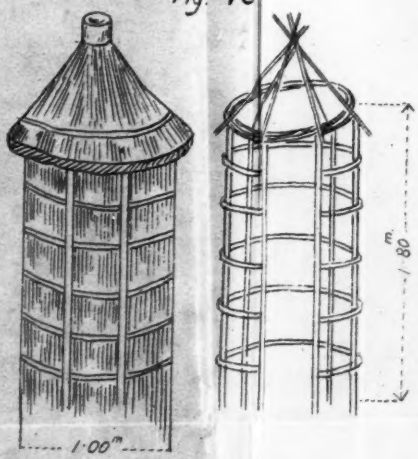


Fig. 48



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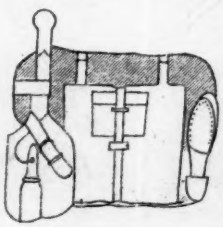


Fig. 38

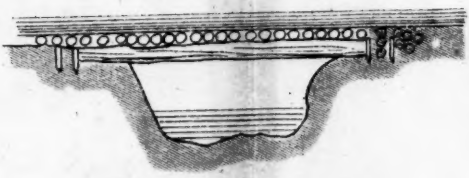
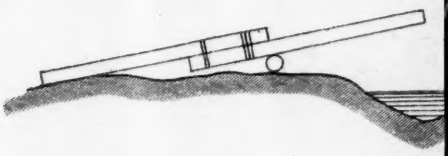


Fig. 39



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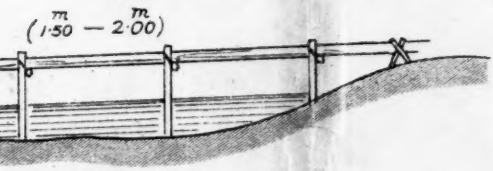

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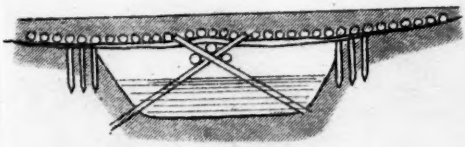

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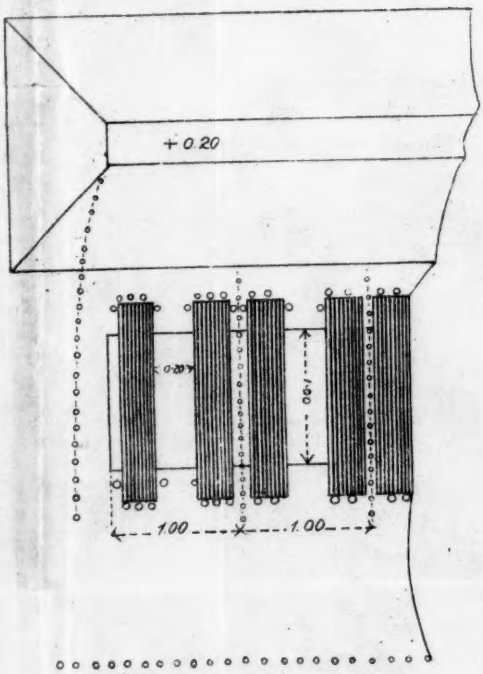

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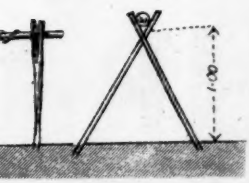

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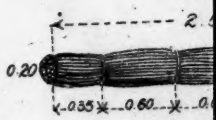

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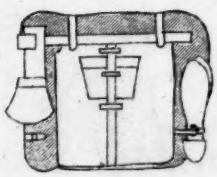
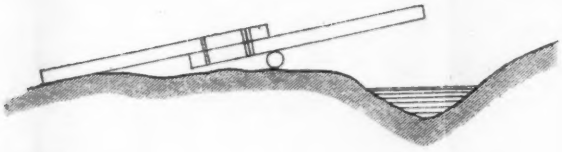


Fig. 57

Fig. 39.



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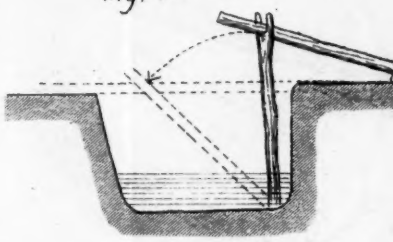

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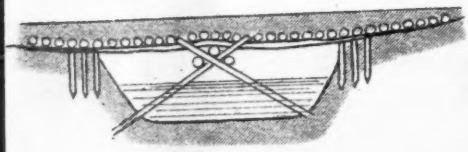

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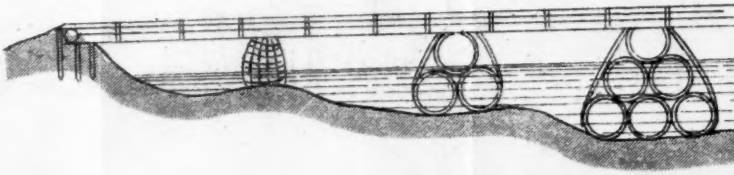

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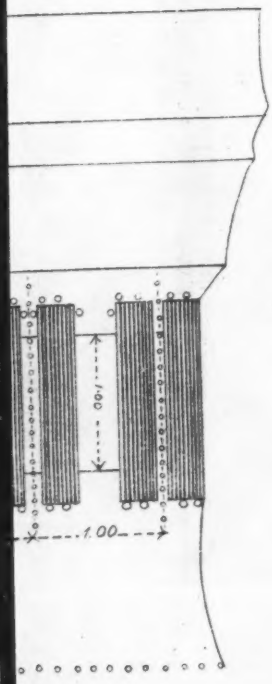


Fig. 51.

Fig. 52.

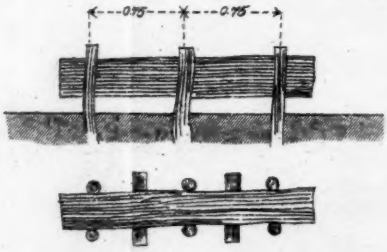


Fig. 57

Fig. 58.

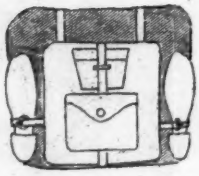


Fig. 59

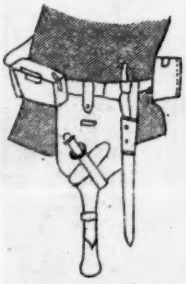
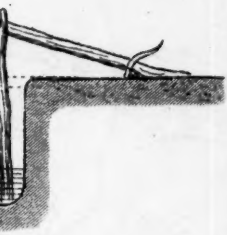
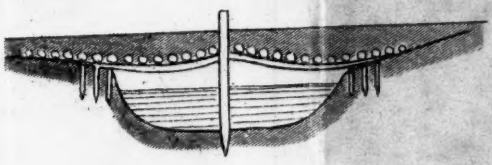


Fig. 41.





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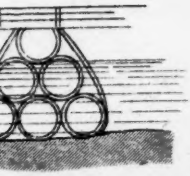

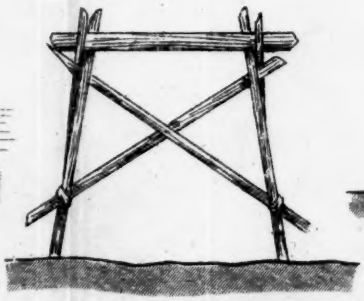

Fig. 46.

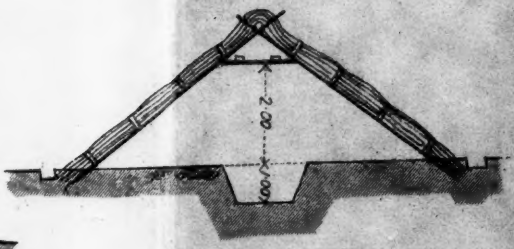

Fig. 53.

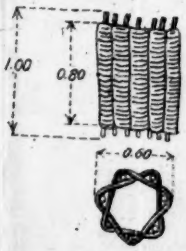

Fig. 54.
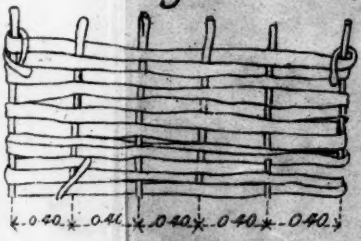
Fig. 60.

Fig. 61.

Fig. 62.

Construction of Railways and Telegraph Lines.

64. For the construction of a Railway on well-drained ground, wooden sleepers are laid crossways and rails fixed to them.

65. For the construction of a telegraph line, felled trees with branches and bark removed should be let into the ground for one-sixth of their length. Growing trees can also be used by removing branches which would be in the way of the wire.

66. To the telegraph poles insulators are fixed, and then the wires are stretched between them.

Camps.

67. The construction of camping arrangements is only possible when troops remain in one place a considerable time. Fire trenches must be laid out in the most suitable positions.

68. One of the most important arrangements is the construction of shelters. The most simple form of shelter is shown in Fig. 46; poles lashed together and covered with thatching and foliage are erected over a trench.

69. For protection from rain or dew a shelter may be constructed as shown in Fig. 47, by means of a lean-to hurdle.

70. Sentry boxes can be constructed of dry poles covered with foliage. (Fig. 48.)

71. For protecting rifles from rain and dew they should be wrapped round with foliage and placed on trestles specially constructed for the purpose. (Fig. 49.)

72. Fig. 50 shows a latrine in plan.

Revetting.

73. Bundles of brushwood are called fascines; they are used for revetting parapets and other purposes. (Fig. 51.)

74. The diameter of a fascine is 0·2 to 0·3 metre, and its length 2·5 metres.

Fascines can be also used for constructing the sides of shelters by placing them between pairs of stakes. (Fig. 52.)

75. The sides of shelters may also be made out of hurdles (Fig. 54); dimensions of these hurdles are:—Length, 2 metres; height, 0·7 metre to 1·2 metre (Fig. 50); diameter of stakes from 0·025 to 0·03 metre; the stakes should be driven into the ground 0·15 metre.

76. A gabion is a cylinder formed of brushwood, without top or bottom (Fig. 53), and is used like fascines for revetting parapets.

APPENDIX.

Equipment:—

1. Every infantryman carries his own equipment.
2. The equipment is carried on the back and on the belt. It consists of a great-coat, pair of boots, rations for two days, entrenching tool in leather case, towel, linen, and a section of a canvas tent. (Figs. 55, 56, and 57.)
3. Fig. 58 shows valise without entrenching tool, but with a pocket for tent rope pickets and other materials.
4. Figs. 59 to 62 show equipment with entrenching tool hung on the belt.

AFTER MUKDEN:
A RUSSIAN VERDICT ON RUSSIAN FAILURES.

Translated from the "Russian Gazette" by Captain W. H. BINGHAM, 69th Punjabis.

IN the first part of this series (May No. of the JOURNAL) reference has already been made to the impossibility of perfectly free and searching criticism in the Russian Press upon the breakdown of Russia's military might. The Liberal Press are of course ready to be down on everything, and are probably far better aware of the weak spots than the most well-informed of foreign critics, while the purely military Press, being entirely official, are naturally not eager to let the cat out of the bag, even supposing their mind was quite clear on the subject. The fundamental causes, as may be expected, are so deep, so complex, and above all, so intimately bound up with the inherent evils of misgovernment in almost every branch of the State, that their summary disposal would unavoidably strain those relations with the Press Censor, on which the Press wholly depends for its very existence. Even the censorship, however, has, in spite of all efforts, been unable to deny the public demand for a certain amount of bare facts. The chief art of the military critic then lies in sailing as close as possible to the wind, and the original author of the articles here reproduced is believed to get as near it as any, not to mention his command of his subject, in which he probably stands without a rival.

No. 2.

WHO'S TO BLAME?

Précis.—The second article follows up in detail the various units of all arms despatched to the front, laying special stress upon the system of filling up gaps in the effective strength of the forces in the field, caused by loss in action. While the Russian War Office followed a policy of mobilising new territorial corps, and despatching a continual succession of fresh and raw units to the field, who were carried in many cases straight from the point of mobilisation on to the field of battle, the Japanese applied all drafts to fill up depleted units, using the survivors as a nucleus, and preserving the existing organisation, as far as possible, intact. In the case of Japanese units composed entirely of Reservists, it is shown how they underwent a very careful and gradual tempering process, commencing at the base, and culminating, after successive stages on the lines of communication, in the firing line, as for instance in General Kavamura's Vth Army. While the Japanese therefore adopted every measure to prevent waste of available *personnel*, Russian units, though reduced to one-half or one-quarter of their establishment, but with a more or less effective skeleton framework of staff, officers, and non-commissioned officers, were often left out of all calculations, not made use of, and frequently

acted as a serious hamper. The mismanagement and faulty employment of reinforcements is thus shown to be the second main defect of the campaign.

No. 3.

Précis.—In the first article it was pointed out how by better management of the lines of communication and utilisation of Siberian water transport (by river), the total number of combatants delivered at the front by rail during the first 13 months of the war might have been brought up to 820,000, instead of 620,000, although the former figure represents the actual number of passengers carried. Even then, remarks the writer, 620,000 men properly handled would certainly in point of strength have outnumbered the Japanese, which leaves no other conclusion open, except the superiority of the Japanese forces in *quality*.

The remainder of the third article and the fourth, dealing with particulars of equipment, together with the necessary facts and figures,[1] will perhaps repay closer examination, and are accordingly given *in extenso*.

Original.—Side by side with the extreme ill-success of our system of drafts for completing the effective strength of the active Army, the superior equipment of the Japanese Army plays a leading *rôle*. As in the Crimean campaign, our Army, by the grace and favour of its bureaucratic heads, has turned out far worse equipped in general than its foe. We will commence with the equipment of the infantry, the arm of the Service in which the superiority of the Japanese in *quality* has been most pronounced, and with such fateful consequences. The comparative figures and data for our 3-line rifle,[2] pattern 1891, and the Japanese Maiji arm, compiled from the *Revue d'Artillerie*, *Scientific American*, *Engineering Journal*, and other sources, are as follows:—

Weapon.	Calibre (inches).	Initial Velocity (Feet per second).	Distance to which sighted (yards).	Height of Trajectory above hor. at distance 650 yards (in feet).	Weight of Rifle without Bayonet (lbs.).	Weight of full complement of ammunition 120 rounds (lbs.).
Russian ...	·300	2,035	1,600	7·2	8·77	7·2
Japanese ...	·255	2,378	2,000	6·6	8·55	6·21

Owing to reduction of the calibre and employment of a more powerful charge (of "Itabaski" smokeless powder), General Arisaki has succeeded in evolving a type of magazine arm far better than our Mosin rifle. The Japanese weapon is lighter than ours; but notwithstanding that, far longer ranging: the distance of aimed fire is 400 yards more than with our arm (or 2,570 paces *versus* 2,060). This extra 500 paces forms an immense advantage in battle, as actually

[1] All dimensions, except where otherwise stated, are given in English measures.

[2] So called from its calibre; a "line" (= $\frac{1}{10}$ of an inch) is the smallest Russian measure of length.

noted in the correspondence of Mr. Nemirόvitch-Dánchenko[1] from the war. To cover 500 yards in attack, 3 or 4 minutes are required, during which our soldiers have to come under the rifle fire of the enemy, without the possibility of replying to it; a defenceless situation such as this at the very commencement of the attack naturally produces a depressing moral effect upon the soldier advancing to the attack. Then the Japanese weapon, in spite of its greater range, is distinguished by a still greater dangerous zone of fire. Hence Japanese infantry are enabled to open effective fire under conditions when our bullets only whistle overhead. The accuracy of the Japanese rifle is also greater than ours, as the angle of descent of the bullet, in a horizontal plane (transversely), is much more strongly depressed, especially in long-distance fire; this accounts for the fact of Japanese riflemen almost continually succeeding in selecting our officers and signallers for their "*hits*," whereas our riflemen could rarely manage to pick off Japanese observers on the elevations of their position. Finally, the penetration of the Japanese rifle is also considerably greater than ours, as the velocity of the bullet is one-sixth greater. Thus while a 1-foot brick wall gives sufficient cover against our 3-line bullet, the Japanese rifle bullet goes through it at the first impact, and cover against this bullet can only be got behind 1½ to 2 feet of brick. It is no great matter for wonder that with our weapons it was impossible to drive out the Japanese from the Chinese villages in which they sat, and which served as real fortresses for them, while the same villages provided us with scarcely any shelter. Thus the long range, flat trajectory, accuracy of fire, and far greater penetration of the Japanese arm sufficiently explain the success of Japanese infantry attacks, and there remains no necessity to resort to stories of the universally intoxicated state of Japanese soldiers in battle, in order to justify our failures. If it were so, the secret of victory would be extremely simple; all we need have done would be to treble the *vodka* ration, and Marshal Oyama's forces would have been scattered to the winds.

It is worth while clearing up the question as regards observations on the "humane" character of Japanese bullets, producing as a rule slight wounds. These observations, in a measure, are not quite reconcilable with the above referred to greater penetration of Japanese bullets. As a matter of fact, we here meet the illusion, depending on the fact, that in considerations resting on the trivial nature of wounds from Japanese bullets, the percentage of those killed by these "humane" bullets is overlooked. In case of fire from these ·255-inch weapons at short distances, the effect of the bullet on living objects is veritably awful. Thus, with those hit in the head by these bullets, the upper part of the skull is wrenched off like the lid of a box, scattering all the brains. A hit in any part of the body rich in blood vessels is always accompanied by such severe hæmorrhage that the wounds are almost all fatal. At the suppression of the Milan riots in 1898, when ·255-inch bullets were first tested on living targets, nearly all wounded arms and legs had to be amputated, as the bones were

[1] A prominent Russian war correspondent in the Russo-Turkish War, and now special correspondent of the *Russian Word* (*Russkoe Slovo*). Amongst his well-known works are a history of the above war and his celebrated "Personal Recollections and Impressions of Skobeleff," so admirably translated by Mr. Brayley-Hodgetts.

found to be shattered or so far dislocated. Those slight bullet wounds of which numbers have been noted in our hospitals, it must be mentioned, have been received in battle at distant ranges, *i.e.*, under conditions where there remains little difference between the ·300-inch and ·255-inch weapon, save, of course, actual ranging power; in other words, at a range when our bullets do literally no damage, the Japanese bullets inflict their "humane" wounds. To put it shortly, the "humaneness" of the Japanese bullets consists mainly in the fact that instead of severe wounds, they kill on the spot, saving their victims from long agony.

The small percentage of "severely wounded" consequently depends on the large percentage of killed and the large number of "wounded" at long ranges, but not on the feeble effect of the deadly Arisaki rifle. This *a priori* conclusion is confirmed by the fact that the general percentage of our killed is considerably higher than that of the Japanese (except in cases where it came to bayonet fighting). This difference in the nature of our and the Japanese losses was especially vividly marked in the very first great battle at Turen-cheng, decided first and foremost by rifle combat at close range; we on this occasion had one killed to two or three wounded, and the Japanese one to four.

It must in justice be said that the Japanese Army is not equipped throughout with the small-calibre Arisaki rifle. The Territorial Army, as well as the auxiliary portion of the Corean forces, and in part the bands of Hunhuses (*i.e.*, supply trains and guerilla parties) are armed with the rapid-fire Murata rifle, 1887 pattern. Although this rifle is out of date, still it is practically in no respect inferior to our 3-line rifle; the calibre of the Murata rifle is ·295-inch, initial velocity 2,000 feet per second. But the troops armed with the Murata rifle number in all only some tens of thousands, and in general it can be admitted that the mass of Japanese infantry are better equipped than in our Army. This comparatively bad armament of our infantry forms one of the most grievous sins of our military bureaucracy, some of the representatives of which, on occasions prior to the war, had the hardihood to aver that our weapon was better than the Japanese; the calibre of our rifle is greater, the bullet heavier, hence proved that ours is the better! Our officialdom may say in self-defence that such first-class Powers, such as Germany and France, still keep to their larger calibred (·615-inch) weapons; but if these Powers have not followed the example of Italy, Japan, and America, and have not adopted the lesser calibred arm, nevertheless cartridges of a new type were introduced into the German and French Armies in the nineties, with more powerful powder, very considerably improving the ballistic qualities of the ·615-inch arm. Since 1891 everything with us has gone its old and former course; and the future historian will note that as in the years 1854-55 and 1877, so too at the commencement of the twentieth century: one of the principal causes of our failures has been the comparatively bad equipment of our infantry.

No. 4.

The subject of artillery equipment in the Japanese and our Armies has given rise to spirited arguments in our Press. While silence was preserved for some reason or other as regards our infantry weapon (it was assumed that the 3-line rifle now, as fourteen years back, still fulfils the utmost requirements imposed by modern techni-

cal progress), attacks on our Military Administration on the score of defects in the armament of the artillery have not ceased since last summer. The *Russki Invalid*, in its official notes for last March, attempted to exculpate our military bureaucracy from the "unjustifiable aspersions" by dwelling on the fact that our new quick-firing field guns were better than the Japanese, and that we had no mountain artillery in the first half of the campaign for the reason that the pattern of Q.F. mountain gun in 1904 was only in a stage of evolution. On the other hand, the *Russki Invalid* maintained silence as to the fact that by a long way not the whole of our field artillery in the Far East consisted of Q.F. guns of the 1900 pattern. A considerable portion of the field artillery of our active Army even to the present moment, have the long ago obsolete guns of various patterns, from 1877 to 1895, provided with interrupted-screw breech-blocks, and are quite unfitted to compete against the Japanese Arisaki system Q.F. guns, either in rapidity of fire or ballistic properties. The whole of our horse artillery (68 guns) are equipped with 3·42-inch (87-mm.) guns of 17 calibres in length, with initial velocity not exceeding 1,300 feet per second, and effective range not greater than 3½ versts (2⅓ miles). On the other hand, the Arisaki guns fire shells with initial velocity amounting to 1,775 feet per second, capable of effective fire at 4½ to 5 versts (3 to 3⅓ miles). But in addition to our horse artillery, a certain number of our dismounted batteries are also armed with guns with old pattern breech-blocks. In any case, these particular dismounted batteries should not be less than 12 (partly formed out of Siberian Reserve batteries), which between them would have 96 guns. These guns are of the same calibre (3·42-inch) as the H.A. guns, but a little longer—21 calibres—and hence their ballistic qualities are somewhat higher (initial velocity 1,500 feet per second, effective range 2⅔ to 2⅝ miles), but still are considerably inferior to the longer ranging and quicker firing Japanese pieces. In the present stage of the campaign the presence of 164 old pattern B.L. guns plays a minor part, as these out-of-date guns form only one-eighth of the general total of General Linievitch's field guns, and seven-eighths new Q.F. guns of the 1900 pattern. But during the first half of the campaign of the past year, up to the battle of Ta-shi-chao, and even up to the battle of Liao-yang things were quite different. Up to the arrival of fresh army corps from European Russia the old B.L. guns formed two-fifths of the whole of General Kuropatkin's field artillery, and this circumstance for a long time did not allow our artillery to contend successfully as a whole against the Japanese guns.

Now, in the second half of the year, this defect has been finally removed, and our artillery in the Far East on the whole is armed with the newest type of long-range Q.F. guns; but it is open to great doubt whether our new guns are actually very much superior to the Japanese. There can be no dispute that our field gun of the Putiloff factory, 1900 pattern, is considerably superior to the Arisaki gun in ballistic properties; the initial velocity of the Putiloff gun projectiles (2,000 feet) is considerably greater, and our gun has a longer range than the Japanese (its range for effective fire extends to 5 to 5¼ versts, or 3⅛ to 3½ miles), and its rapidity of fire is double as great (16 shots a minute, against the Arisaki's 8). But this high rate of fire plays almost no part, as it is beyond the limits of practical utility. In the opinion of so eminent a judge of artillery science as General von Rohne, of the German Army, the effectiveness of fire gains little

from the increase of rapidity of fire beyond a fixed limit (4 to 5 shots per minute); for effectiveness of fire it is essential to observe the fall of the shots, and correct the aim, otherwise the fire becomes mere child's play. As regards fire on to areas where accurate ranging is not essential, if the fire were kept up at the rate of 16 shots a minute the battery would run through its entire ammunition supply in a quarter of an hour, and then be compelled to keep silent until ammunition were brought up from the artillery parks, and in action this would for the most part entail a whole hour—sometimes, in fact, it would be utterly impossible, when the approaches to the battery are actually under the enemy's fire. Most important of all is the fact that the Putiloff gun of 1900 suffers from three substantial defects of construction, which quite counteract its advantages of long range and the greater power of its projectiles (the shrapnel of our gun weighs 14·4 lbs., and contains 260 bullets, while the Arisaki shrapnel weighs about 12·2 lbs., and contains only 200 bullets). Firstly, the ballistic properties of our new gun, according to the opinion of German authorities (*vide*, for instance, Löbell's *Jahresberichte*, 1903, p. 474), are exaggerated, owing to the fact that during fire the gun does not rest firm, and the carriage jumps somewhat. This slight unsteadiness of the gun cannot help reacting upon the accuracy of the fire. There is nothing, then, extraordinarily surprising if the more conscientious and observant of our newspaper correspondents certify that our shrapnel fire does little damage to the Japanese, amongst whom bayonet and small-arm bullet wounds are far more frequently observable than wounds from shrapnel. For our soldier, on the other hand, Japanese shrapnel and Shimose have generally been the most persistent and unpleasant of guests. The second important defect of the Putiloff gun, also connected with the exaggeration of its ballistic properties, manifests itself in its weight. Our 1900 gun (with gun carriage and full limber) weighs 1 ton 17 cwt., while the Japanese Arisaki gun does not weigh more than 1 ton 6 cwt.; it takes 6 horses to draw our gun and 4 for the Japanese. This extra 11 cwt. of dead weight is precisely the cause of the defective mobility of our artillery, not only in battle but on the march as well. Japanese batteries, being much lighter, were able to frequently change their position, and turn up where no one expected, whereas our guns (besides taking longer to limber up) could not go along roads which Japanese artillery moved freely over. This very excessiveness of weight in our guns was not infrequently the cause, during retreat, of our having to abandon artillery a prey to the enemy, notwithstanding the self-sacrifice of the gunners and infantry assisting them. Who, indeed, does not remember the woeful tales of a whole battery in the retreat from Aisiandzian getting choked in the mud, and all the exertions of the exhausted soldiers dragging the guns by hand being in vain? Were the guns one-third lighter we would in all probability have lost one-third less of them, and even with all the teams shot down, would not have been forced to abandon our guns to the enemy. The third defect in the construction of our gun is the introduction of only one kind of projectile—shrapnel—and the abolition of common shell. It has already been explained that shrapnel is only applicable for fire against living objects, and powerless against cover (earth-works, stone walls, etc.).

Our shrapnel, upon the testimony of eye-witnesses, was unable to demolish hostile entrenchments or to drive the Japanese out of

villages, in which they comfortably sat out our fire. Even clumps of trees, and fringes of woods covered Japanese infantry from our shrapnel. For instance, at the commencement of the battle of Mukden we were quite unable to drive out the Japanese from the woods on the north bank of the river Shaho, close to the railway bridge, and resting on these woods the Japanese captured the bridge from us, which our skirmishers were to have occupied, and thus nipped in the bud General Kuropatkin's attempt to cut off Marshal Oyama's centre on the river Shaho by a counter-attack. In similar cases our officers have frequently been compelled to call up the old-fashioned B.L. gun batteries, but their number was limited, and they could not be everywhere. Although shrapnel fuse has double action (time and percussion), still the percussion adjustment does not enable it to replace common shell, as shown by experience. On impact against any considerable obstacle shrapnel bursts in front of this cover (as for instance stone wall) and not behind it; the scattering shrapnel bullets have such a slight initial velocity (200 feet per second) that they do not even penetrate trees of medium thickness. The introduction of only one kind of projectile in the field artillery was mainly called for owing to the fact that formerly with the employment of projectiles of 3 kinds (shrapnel, case, and common shell) great disorder often existed in the supplying of batteries from magazines and parks. Some batteries got only case, and were obliged to maintain silence, until the enemy got within a few hundred paces; in other batteries nothing was to hand except common shell. But it is hardly practicable to give up so essential a weapon to modern battles as common shell merely on account of the difficulty of supplying batteries with projectiles of the various types required. The Japanese common shell (Shimose) have done them yeoman service, and have generally been a serious menace to our trenches, and the soldiers sitting behind them.

The ineffectiveness otherwise of the 1900 pattern Putiloff gun was soon enough acknowledged by our War Office itself. After endless experiments and trials had made clear the defects of the new gun, their manufacture, only just having commenced, was suspended, and trials of the new 1902 pattern Q.F. gun commenced. It is, however, not evident why the working out of the details of the new gun hung fire, and at the beginning of the war our artillery was left armed almost exclusively with the old B.L. guns which had already had their destiny for the scrap heap pronounced four years earlier; only some brigade divisions were equipped with the 1900 pattern Q.F. guns. From the end of 1903, under the pressure of threatening danger, and having failed to work out the new 1902 type of gun betimes, our War Office started to grapple energetically with the manufacture of guns of the 1900 pattern, although the self-same authorities had already acknowledged them unfit. As a consequence of this shilly-shallying officialdom, our artillery actually had to be re-equipped after the war was already in progress, while some two weeks were given to batteries proceeding to the Far East to familiarise themselves with the new gun, which neither officers nor men had ever set eyes on up to that moment. Can we blame our ill-starred gunners if they had to *learn* how to fire their guns for the first time under fire of the enemy on the battle-field? At length the experiments with the new 1902 pattern gun were completed last year, and a start made with its production on a large scale. No data of the new 1902 gun have eked out into the Press, and it is a moot point to what extent it has been made possible to eliminate the

defects of the 1900 pattern Putiloff gun. All that is known is that the new gun is steadier during fire, and, like the new French and English guns, is furnished with a steel shield nearly ⅛-inch (5-mm.) thick protecting the layer and No. at the breech from small arm fire up to within 600 yards range. We have no data at our disposal to make clear whether the excessive weight and cumbersomeness of the 1900 Putiloff gun have been dispensed with and whether common shell has been reintroduced or not. We are hence in no position to assert that our artillery has at last actually got a gun to beat General Arisaki's Japanese field gun on its own merits. At all events, there can hardly be any talk now of re-arming our artillery with new guns of the 1902 type at the Far East. Firstly, if we are to credit German sources (Löbell's *Jahresberichte*, 1904, p. 398), the production of these guns is advancing only very slowly owing to the want of proper plant for their manufacture. Of course it would be possible to order new guns from Krupp or other foreign gun factories, but the Trans-Siberian line could not deliver 1,500 guns with a million shells in less than a year, and the re-armament could hardly be completed earlier than the commencement of 1907, while time and tide, and with them the course of events at the theatre of war. . . . . ! It would be aimless to transfer the artillery to the rear for re-armament (for of course it needs time for instruction in firing the new guns) when the Japanese may re-commence their advance any day. It is quite clear that only batteries sent out from Russia in Europe can appear at the scene of operations with new guns of the 1902 pattern. For the present it has been decided (*vide Russian Gazette*, of 9th March, 1905 [old style]) to equip with 1902 pattern guns and despatch to the front only 3 field batteries.

Hence in the near future the equipment of our field artillery in the Far East will be of an extremely motley character: from 1877 to 1895 pattern B.L. guns, Putiloff guns, and the latest 1902 pattern guns with steel shields.

There has seemingly never yet been an instance in history where artillery has been twice re-armed in the course of one year. Naturally, these Putiloff guns, so loudly vaunted in their short day, and copied, it would appear, from the German Erhardt model, which had already been discarded in Germany in 1901, will have to be thrown away after the war, and re-armament with 1902 guns be completed. It goes without saying that this re-armament is not at all likely to work out under some millions sterling. Besides, after more than a hundred millions have already been spent upon the war, is it worth the while of our military bureaucracy to take thought of the three or four millions sterling already cast to the winds in the manufacture of the Putiloff guns? The state of affairs regarding the mountain artillery is even more surprising, and our Army still waits in vain for its supply in sufficient quantity. The justification put forward by the *Russki Invalid*, that there was no mountain artillery because the new model of Q.F. mountain gun had not been finally evolved by 1904, is singular, to put it in the mildest form. Indeed, in the Far East not only was there no Q.F. mountain artillery, but altogether no mountain artillery at all, excepting a total of 2 batteries armed with 1883 pattern mountain guns. Only in August, 1904, did a few batteries of mountain artillery appear on the scene, and then at the time of Mukden the number of mountain batteries of General Kuropatkin's Army rose to 12 and the guns to 96; whereas already in the beginning

of 1903 the Japanese Army possessed 410 Q.F. mountain guns of the same Arisaki system, *i.e.*, four times as large a number of these guns so indispensable in mountain fighting. Our mountain batteries Nos. 13 to 18, formed last year at Samara, still remained in Russia, according to the "Abridged Army List" (*Kratkoé Raspeessanié*), and the batteries Nos. 19 to 26 were still unformed. When General Linievitch gets these mountain batteries he will have 208 mountain guns, that is to say, in any case half as many as Marshal Oyama. While our artillery fought among mountains they got no mountain guns owing to the lack of the new type of guns. This is just the same as if, for instance, infantry, on occasion of the evolution of a new pattern rifle, and up to the conclusion of the re-armament were left entirely without rifles and armed with revolvers only. With the advance of summer, when military operations have almost entirely left the mountains (with the exception of General Linievitch's left), our Army is to receive at last the perfected mountain guns which, however will, of course, do immense service after the recapture of Mukden and Liao-yang during the march of our Army on Corea and Kwang-tung.

The details of construction of our Q.F. mountain guns are not available, while the old 1883 pattern without doubt is far inferior to the Japanese Arisaki mountain gun. The calibre of our gun is $2\frac{1}{2}$ inches, the Japanese 3 inches; the initial velocity of ours, 900 feet per second (that of the Japanese about 1,000), weight of projectile 9 lbs. (that of the Japanese gun over 12 lbs.). Our 1883 mountain gun cannot hold a candle to the Japanese one, either in range, penetration, or rapidity of fire.

The state of affairs with our heavy field artillery, without which the attack of even temporary fortifications is impossible, has fared little better than with our mountain guns. Almost up to the battle of Liao-yang itself we had hardly any heavy field artillery, and then 2 mortar batteries appeared on the scene; towards the end of 1904 the number of mortar batteries in our Army was raised to 10, with 80 mortars. The Japanese, for their part, from the very beginning of warlike operations, furnished every one of their Armies with a regiment of heavy artillery, composed of 4 batteries of Krupp howitzers (24 pieces to a regiment), so that under Mukden already 120 howitzers were in action. At the present moment, according to the reports of our paper correspondents, each division of the Japanese Army has a battery of 6 howitzers with it, so that Marshal Oyama's Army, not counting the newly-formed Sixth and Seventh Armies, has 168 howitzers at its disposal. But besides our heavy field artillery being half as many as the Japanese, the Krupp Q.F. howitzers are far superior to our old 1886 mortars. In spite of the Krupp howitzer of 4·75-inch calibre being more mobile and lighter than our mortar (the former weighs 1 ton 19 cwt., and our mortar a little over 2 tons 1 cwt.), this howitzer ranges much farther than our 1886 mortar. The initial velocity of the Krupp howitzer's projectile (weighing about 44 lbs.) is 902 feet per second, while that of our 1886 mortar's (weight $52\frac{1}{5}$ lbs.) is 738 feet per second, so that our mortar only shoots 2 miles and the Japanese howitzer 3. Still more powerful and longer ranging is the 6-inch Krupp howitzer, also introduced into the heavy field artillery of the Japanese Army, though in what numbers is uncertain. With the same initial velocity (902 feet), the 6-inch projectile weighs 79 lbs. True, the 6-inch howitzer is extremely heavy (its weight is

nearly 2½ tons), but the Japanese have managed to contrive, as at Mukden, to use it even on ordinary wheeled roads. It was precisely this howitzer, with which our mortars could not contend, that decided the fate of the action on our right flank during the battle of Mukden; our redoubts, pushed forward with extreme labour in the period of the long winter occupation on the north bank of the river Hunho to the west of Mukden, were dismantled in a few hours by the 79-lb., 6-inch, fougasse-like shells, and consequently the whole line, from Madiapu to the Imperial Tombs, had to be abandoned. . . . It is only just to say that now Q.F. howitzers are appearing on the scenes on our side too; but, as evident from the Imperial Order on the despatch to the Far East of the 3rd Mortar Regiment, General Linievitch is only to get 4 howitzer batteries and 32 howitzers. The mainstay of our heavy field artillery is still to be the same old mortars as before, from which it is only possible to deliver effective fire under the very nose of the enemy. Finally, as regards the heavy siege ordnance of the opposing Armies, neither its numbers nor its exact composition are known exactly, and hence an accurate comparison is impossible. In our siege artillery, long guns of 4¼-inch calibre (32 calibres long and with 36-lb. projectiles) only are used, while the Japanese bring into employment long 6-inch naval guns (40 calibres long with 99-lb. projectiles). Our heaviest howitzers of 8-inch calibre, fire 180-lb. shells, while the Japanese have 10-inch howitzers, throwing 468-lb. shells. To correspond to the monster Japanese 11-inch mortars, the projectile of which weighs 702 lbs., we have in our siege park 9-inch mortars with 270-lb. shells. In a word, our War Office have expressly put forth their whole energies to ensure our artillery being numerically and in quality inferior to the Japanese in all respects.

A BRIEF HISTORICAL SKETCH OF THE IRISH INFANTRY REGIMENT OF DILLON AND THE IRISH STUART REGIMENTS IN THE SERVICE OF FRANCE, 1690-1791.

Continued from May JOURNAL, p. 569.

EARLY in the spring of 1747 the Duke of Cumberland again assumed the command of the Allied Forces, numbering some 120,000 men, made up of British, Hanoverian, Dutch, and Austrian troops, but the Army suffered considerably from disease and shortness of provisions. The Marshal de Saxe, on the other hand, who was remarkable for the care he took of his soldiers, re-assembled his Army at his leisure, which had been lying comfortably cantonned round Brussels, and here he was joined early in April by the six Regiments of the Irish Brigade, now again complete. On the 22nd May, Louis XV. arrived at Brussels, and the Marshal resolved to undertake the siege of Maestricht, the last important stronghold left to the Allies in the Netherlands, and the possession of which the King was anxious to obtain, as he hoped it would tend to bring about peace, which he ardently desired. As the result of the skilful operations on the part of the Marshal, the Duke of Cumberland found himself compelled to fall back in the direction of Maestricht, in order to cover it from the threatened investment, a movement which brought about, on the 2nd July, the battle of Lawfeld or Laffeldt, in which, quoting the words of Marshal Saxe to the King, "les Irlandais ont fait des prodiges." The key to the position was the village of Laffeldt, which was strongly entrenched and most stubbornly held by the Anglo-Hanoverian troops, who repulsed no less than four attacks by the French infantry; the Marshal then ordered a fresh attack by the Irish Brigade and that of the Royal des Vaisseaux, the pick of the French Army, and they succeeded in carrying the village at the point of the bayonet, and the Duke had to withdraw, which he did in good order, bringing off his heavy guns, although he had to sacrifice 29 field guns, which fell into the hands of the victors. The Brigade lost heavily on this occasion, no less than 132 officers and 1,600 men being placed *hors de combat*, the loss of Dillon's being their new Colonel, Count Edward Dillon, mortally wounded, and 360 officers and men killed and wounded.

With the death of Count Edward Dillon there remained in France no officer of the family competent at the time to succeed to the command; he was the fourth of the five sons of the Count Arthur Dillon, who had brought the Regiment to France in 1690, and who

had succeeded each other in turn as Colonel. The fifth and youngest brother, Richard Dillon was in Holy Orders, and Archbishop of Narbonne, and much pressure was brought to bear on the King to confer the command and proprietary rights of this distinguished Regiment on some French officer. Louis XV., however, refused, saying he could not consent to see the Regiment pass away from the hands of the family, who had so long been connected with it, and had rendered such devoted service to himself; so he named Arthur, the infant son of Henry, 11th Viscount Dillon, who had given up the command in 1743 in order to proceed to Ireland and preserve his family interests in that country. During the minority of Count Arthur, Lieut.-Colonel Mannery was temporarily appointed to fill the vacancy, Viscount Dillon, in the interests of his young son, looking after the duties connected with the proprietorship of the Regiment.

The Marshal, in spite of his victory, finding himself unable to undertake the investment of Maestricht, turned his attention to Bergen-op-Zoom, "the strongest fortification of Dutch Brabant, the favourite work of the famous engineer Cohorn, never conquered, and generally esteemed impregnable." It was amply supplied with artillery, well garrisoned, and well provisioned, while 16,000 of the Allied troops occupied military lines, communicating with the fortress and protected by a chain of works. The siege was entrusted by the Marshal to Count Lowendahl, who had distinguished himself very much at the battle of Fontenoy, where he headed part of the Irish Brigade, and it was pressed for two months — from July to September—without any apparent result, while the investing army suffered heavily from disease, due to the unhealthiness of the marshy country surrounding the fortress. The Count now determined to change his tactics, and attempt to carry the place by a *coup de main*, a direct assault being the last thing the garrison would be likely to expect or take precautions against. On 16th September at daybreak, all preparations having been made in the dark, under cover of a tremendous fire from the siege guns, the storming columns dashed forward and succeeded in gaining the ramparts in three places with, comparatively speaking, small loss, and so taken by surprise were the garrison, that in two hours the whole fortress was in the hands of the French, the troops in the adjoining lines being driven out with great slaughter. The spoils captured were enormous, including 388 guns, a vast supply of muskets, ammunition, seventeen vessels in the port laden with supplies of all kinds, the military chests of the Allied Army, with the silver plate belonging to the Princes and Generals, the whole forming a booty of immense value.

The Brigade took no special part in this capture of Bergen-op-Zoom; but we have referred to it for two reasons: firstly, because it was unquestionably a very remarkable feat of arms, reflecting the greatest lustre on the French troops taking part in it, as in the opinion of the highest military authorities of the day the fortress was impregnable, an opinion shared by Mr. Benjamin Robins, the greatest English military mathematician and engineer of his age, who was sent over by the English Government to assist in defending the place, and who afterwards declared:—"That the place was as capable of defence when it was taken, as it was when the French Army first sat down before it, and that if it had been skilfully and faithfully defended no military force or skill, however great, could have succeeded against it." An opinion which, while reflecting on the de-

fenders, in no way detracts from the daring of the French leaders, who staked everything on the success of such a *coup de main*, and won. Secondly, because the siege and capture of the fortress gave Count Lally further opportunities of adding to the great military reputation he had achieved for himself at Fontenoy, Laffeldt, and on other occasions. Acting as Quartermaster-General to Count Lowendahl, Lally was the life of the besiegers, and it was on his initiative, as the result of his close observations of the besieged, that Lowendahl decided to risk his *coup de main*, and from that time on he was looked upon as one of the best soldiers in all France.

Louis XV, after the fall of Bergen-op-Zoom, left the Army on 23rd September for France, having first nominated the Marshal de Saxe to be Governor of the conquered Netherlands, Lowendahl to the rank of Marshal, and Count Lally to Brigadier-General.

In the spring of 1748 the Marshal reassembled his forces, determined to lay siege to and capture Maestricht; under him were serving Lieut.-General Lord Clare, the Earl of Tyrconnel, Count Lally, and several other distinguished Irish officers, while the Brigade, with that of the Guards, formed the force covering the siege; but before the town could be assaulted the preliminaries of peace had been signed, and the operations in the field came to an end. It was recognised, however, that Maestricht could not have held out, so it was surrendered to the Marshal, honourable terms being granted to the garrison To Brigadier Count Lally, the Marshal's confidant and right-hand man, were due the admirable measures taken for investing the fortress and compelling its ultimate surrender, and for his signal services, on the day of the capitulation he was promoted to Major-General. Peace was finally signed under what is known in history as the Treaty of Aix-la-Chapelle on 18th October, 1748.

During the period of peace which lasted on this occasion to the outbreak of the Seven Years' War in 1756, Dillon's was quartered at Dunkirk, Boulogne, and other places in the North-West of France, and during the summer of 1754 was with other regiments employed in the construction of the canal from Lys to the Aa, the number of men furnished each day for the work being one hundred and fifty per battalion. In February, 1749, the cadres of all the Irish Regiments had been somewhat reduced, but in the summer of 1756 the disputes between France and England having again become acute, and a renewal of the war on the Continent seeming imminent, a general increase of the Army was ordered, and the strength[1] of the companies of Dillon's was raised to fifty-five rank and file; the staff of the Regiment remained the same, but the number of company officers was increased.

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[1] From the time of their arrival in France, the Irish Regiments had been almost exclusively composed of officers and men of that race, thanks to the steady stream of immigration into France of large numbers of their countrymen, who hoped to see the House of Stuart again remount the Throne. But in 1746, after the news had been received in London of the fury with which the Irish Brigade had attacked the English at Fontenoy, Parliament passed an Act forbidding any Irishman to take service with France on penalty of death, while in 1756 an Act was passed by the Irish Parliament inflicting the death penalty on all natural-born subjects in the French service who should land in Ireland, and on their abettors and concealers. This sentence of perpetual banishment deeply

In the summer of 1756, the Regiment was sent to the Camp of Instruction, which had been formed at Notre-Dame-des-Vertus, near Dieppe, in order to go through a course of the new field drill, which had been recently adopted. In the instructions for the commandants of these camps it was laid down, among the points on which special stress was laid:—"*La plus grande attention sera donnée aux feux et à la marche, parce qu'il importe plus d'apprendre aux hommes à tirer avec promptitude et précision ainsi qu'à bien marcher unis, que de faire des mainements d'arme et autres exercices de parade.*" The men were also practised in embarking and disembarking, and the infantry taught to work guns after the Swedish custom.

What is known as the Seven Years' War broke out in 1756, but it was not until 1759 that Dillon's and the other Regiments of the Irish Brigade took any part in it. In the spring of that year the Brigade was held in readiness at Brest to take part in the expedition which was destined to make a menaced descent upon England. The actual intention of the French Commanders was that a landing should be effected on the coast of Munster, the French fleet, under the Marshal de Conflans, being employed to cover the expedition, the opportunity being taken for it to sail when the English blockading fleet, under Sir Edward Hawke, should be temporarily driven off the coast by the prevailing autumnal winds. The Brigade and some of the other troops were actually embarked, and Hawke, as was expected, having been driven over to Torbay, de Conflans put to sea on the 14th November; but as luck had it, Hawke, instead of being kept wind-bound on the English coast, was also able to get to sea again on the 14th, and came up, in a gale of wind, with de Conflans off

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affected the Irish-born officers and soldiers of the Brigade; but nevertheless, writes Fieffé, the French historian:—"Les Irlandais repondirent à cette sentence capitale, en s'enrôlant avec plus d'empressement sous les drapeaux de la France." From the date of the passing of the Act, although the tide of immigration still continued, it was necessary, in order to maintain the Brigade at its proper strength to recruit from other sources as well, and men were drawn from the northern coast populations of France to fill the ranks. It was also not uncommon to find French deserters who, having gone over to some foreign Power and learnt the language, presented themselves as deserters from that country's Army and rejoined the French flag in Dillon's or some other of the Irish Regiments. Having completed their new period of service they obtained an honourable discharge, and were able to return to their homes without incurring the danger of arrest. Several Irish Catholics, moreover, incorporated in the English Army, joined the Regiments of their country in the service of France, when the fortunes of war gave them the chance of doing so. This was particularly the case during the expedition to America, 1779-1782. At no time, however, did the immigration of Irish officers cease completely. Even up to the Revolution the orders were given in the national tongue, and the cadres were composed of men either Irish by birth and blood or who had been born of Irish families established in France. One source of recruiting yet remains to be mentioned, which was by no means unimportant. It was very common to find in the regimental rolls against the names of soldiers the following note:—"Né à la suite du régiment au siège de . . . au camp de . . . à l'armée de . . .," etc. —("Observations historiques présentées par Arthur Dillon à l'Assemblée Nationale."—Bibliothèque Nationale.)

Quiberon Bay on the 20th and completely defeated him, thus bringing the contemplated invasion to a premature and disastrous close. The transports on board which Dillon's and the rest of the Brigade were embarked escaped and took refuge in Rochefort.

After this unfortunate adventure the Brigade was ordered to Germany, and in June, 1760, joined the Army under the command of the Marshal Duke de Broglie. It consisted at this time of the five Regiments of Dillon, Bulkley, Clare, Ruth, and Berwick, but although it took part in the operations against the Allies in Hesse and Thuringia, no special opportunity for distinction seems to have been afforded it. During the winter, 1760-61, the Brigade went into quarters at Marburg, a small detachment being sent to Göttingen.

At the beginning of February, 1761, profiting by the dispersion of the French troops over too wide an area for their winter quarters, Prince Ferdinand of Brunswick took the offensive. A detachment of 350 picked men had been drawn from the Irish Regiments to proceed to the assistance of the small garrison at Göttingen, which was threatened by the enemy. They were, however, detained at Fritzlar *en route*, as the Commandant of that place (where there was a large magazine of stores for the Army) the Count de Narbonne, who had received information that the Hereditary Prince of Brunswick was about to attempt a surprise attack, had only with him as garrison one battalion of the Royal Grenadiers; and it was due to the intrepid behaviour of this small Irish force, as de Narbonne handsomely admitted, that the attack of the enemy failed, and to the equally gallant defence of Marburg by the rest of the Irish Brigade, which was attacked at the same time by an Allied force under General Breitenbach, that the Duke de Broglie was given time to draw in and concentrate his Army. The Brigade on this occasion was commanded by Count Louis Drummond de Perth, a gallant officer of Scottish birth, who had served in the Regiment of Berwick at one time, and was afterwards Lieut.-Colonel of the Regiment "Royal Ecossois." At Marburg he held the rank of Brigadier, and the defence was under his immediate conduct. He greatly distinguished himself, personally heading the Irish troops and three times repulsing furious attacks on the part of the enemy; in the last of these General Breitenbach was killed, and his force fell back in such disorder that it had to retreat, losing three guns, while all the killed and wounded were left behind on the ground.

De Broglie now took the field, and once more drove Prince Ferdinand out of Hesse, compelling him to raise the siege of Cassel, which he had been pressing for nearly a month. In June, de Broglie, having effected a junction with the force under the Marshal de Soubise, once more advanced against Prince Ferdinand, whom he attacked on the 15th July at Villingshausen, on the Lippe, driving back his left wing, the Irish Brigade seizing the redoubt and village of Scheindingen. The battle, after having been prolonged until late in the evening, was renewed again at daybreak, when de Broglie, not being properly supported by de Soubise, was eventually forced to retire with a loss of 5,000 men killed and wounded. The retreat, however, was gallantly covered by the Irish Brigade, so that the Allies were unable to pursue with any effect. The French soon recovered, and again advancing, over-ran the greater part of Westphalia, the Brigade again being noted for their bravery in the small actions of Socet and Unna. Towards the end of the year the Army

went into winter quarters, when all the Irish Regiments, after being concentrated at Marburg, were ordered to Flanders. In March, 1762, Dillon's was ordered to Dunkirk to form part of a new expedition intended to threaten a new descent on the English coast; but the war was now dragging out to its conclusion, and the Treaty of Paris, bringing it to an end, was signed on the 3rd November, 1762. This was the last war in which the Brigade, as such, which had achieved for itself so great renown during the seventy years of its existence, served, as, although some of the Regiments still retained their old identity, the Brigade practically, in that form, ceased to exist.

During the period of peace which followed, numerous reforms were introduced into the Army. Dillon's, which for some time had consisted of only one battalion of nine companies, one of which was the Grenadier, had part of the Regiment of Lally incorporated with it in February, 1763. On the 25th August, 1767, the King, Louis XV., granted to Arthur Dillon, the second son of Count Henry Dillon (11th Viscount), then in his eighteenth year, who had been nominated in his infancy as the future Colonel and proprietor of the Regiment, permission to assume his rank and title, but he did not take over the command until 1773, when he became 23 years of age.

In October, 1775, Dillon's was incorporated with the Regiment of Bulkley, of which it became the 2nd Battalion. The name of Dillon, however, was given to the new Regiment, and it retained the uniform and colours of the old corps, taking the seniority, however, of Bulkley. Each of the two battalions preserved its previous organisations, Count Arthur Dillon becoming the Colonel of the new Corps, and the Chevalier Barfort de Jerningham, ex-Colonel-Commandant of Bulkley, being appointed Colonel, Second-in-Command. In June, 1776, the strength of each battalion was fixed at ten companies, and this organisation was retained up to the Revolution. In 1776 a slight change was made in the uniform, Dillon's giving up their old facings, which were blue, for jonquil-yellow, the collar of the vest remaining white.

The Court of Versailles, having concluded at Paris early in February, 1778, a treaty of amity and commerce with the new United States of America, as an independent Power, war necessarily broke out again between France and England.

(To be continued.)

NAVAL NOTES.

HOME.—The following are the principal appointments which have been made: Captains—H. C. Kingsford to "Goliath"; A. P. Stoddart to "Cæsar"; Sir G. J. S. Warrender, Bart., C.B., M.V.O., to "Carnarvon"; J. G. Hewitt to "Argonaut"; E. P. Ashe to "Kent."

His Majesty has been pleased to approve the following appointments when the vacancies occur:—Rear-Admiral E. S. Poë, C.V.O., to be Commander-in-Chief of the East Indies Squadron, in succession to Rear-Admiral G. L. Atkinson-Willes, when he vacates the command on promotion.

Rear-Admiral G. Neville, M.V.O., to the Command of the First Cruiser Squadron, in succession to Rear-Admiral E. S. Poë, M.V.O.

Vice-Admiral Lord Charles Beresford, K.C.B., K.C.V.O., left England on the 2nd inst. for Malta; he hoisted his flag on board the "Implacable" at Genoa on the 4th inst., arriving at Malta on Tuesday, 6th inst., when he took over the command of the Mediterranean Fleet from Admiral Sir C. E. Domvile, G.C.B., G.C.V.O., who left for Genoa and England on board his flag-ship, the "Bulwark," the same evening; the "Bulwark" arrived at Genoa on the 8th inst., and after landing Sir C. Domvile, returned to Malta, Lord C. Beresford's flag being transferred to her on the 11th inst. from the "Implacable."

The first-class battle-ship "Barfleur" arrived at Portsmouth on Sunday, the 7th ult., from Colombo, with the relieved crew of the "Vengeance" from China; she paid off on the 10th ult., and has again taken her place in the Reserve Division, Rear-Admiral Groome's flag being re-transferred to her. The first-class battle-ships "Ocean" and "Centurion" have now been ordered to return to England from China; the "Goliath" and "Canopus," which were *en route* to relieve them, have been stopped at Colombo, and also ordered to return.

The new first-class armoured cruiser "Carnarvon" commissioned at Devonport on the 29th ult. for service in the Mediterranean, where she relieves the first-class armoured cruiser "King Alfred." The first-class cruiser "Edgar" has joined the Fourth Cruiser Squadron, under the command of Vice-Admiral Bosanquet.

Steam Trials. — The new first-class battle-ship "New Zealand" has concluded her steam trials, which were very satisfactory. Whilst they were in progress only the usual steaming complement was allowed in the engine-room, and the use of water to cool the bearings was dispensed with. The records taken during the 30 hours' trial at a mean collective I.H.P. of 3,938 were as follows:—Draught, 26 feet 3 inches forward, 27 feet 3 inches aft; steam in boilers, 186 lbs.; vacuum, 27 starboard, 27 port; revolutions per minute, 70 starboard, 71·1 port; mean total I.H.P., 1,936 starboard, 2,002 port; speed, 9 knots; coal consumption, 2·02 lbs. per I.H.P.; total loss of water, 14¼ tons. The results of the 30 hours' trial at 12,918 mean collective I.H.P. were as follows: — Draught, 26 feet 3 inches forward, 27 feet 3 inches aft; vacuum, 26·7 starboard, 27·2 port; revolutions per minute, 108·7 starboard, 27·2 port; mean total I.H.P., 6,360 starboard, 6,558 port; speed, 16·9 knots; coal consumption, 1·84 lbs. per I.H.P.; total loss of water, 26 tons. Eight hours' full-power trial: — Draught, 26 feet 4 inches starboard, 27 feet 3 inches port; steam in boilers, 197 lbs.; vacuum, 25·5 starboard, 26·5 port; revolutions per minute, 120·1 starboard, 121·6 port; mean total I.H.P., 9,084 starboard, 9,299 port; mean collective I.H.P., 18,383; speed, 18·59 knots; coal consumption, 2·1 lbs. per hour; total loss of water, 12·4 tons.

The official full-speed trial of the torpedo-boat destroyer "Garry," built by Messrs. Yarrow & Co., has been successfully completed. The result has been awaited with special interest, because the shape of this vessel differs considerably from that generally adopted, the after part resembling somewhat the design now common for racing motor-boats, the breadth amidships being continued nearly the full width to the stern. The counter thus extends considerably over the propellers, thereby protecting them from damage, and at the same time admitting of more commodious living spaces for the officers without exposing a greater length to gun-fire. The rudder, instead of being secured to the stern as is customary, has its entire surface below the water-line, and therefore is not exposed. The keel is perfectly straight from end to end, the overhang of the stern being of such short dimensions that no special support is necessary, thus simplifying docking operations. The coal-carrying capacity of this form of hull is greater than is usual in the "River" type of destroyer to the extent of 20 tons. These advantages are obtained in combination with a diminished resistance, as the recent trial indicates, the speed attained being 26½ knots, that of other destroyers of the same class varying from 25½ to 26 knots.—*Times.*

Naval Expenditure and Mercantile Marine.—Return showing Aggregate Naval Expenditure on Seagoing Force; Aggregate Revenue; Aggregate Tonnage of Mercantile Marine; Annual Clearances of Shipping in the Foreign Trade; Annual Clearances of Shipping in the Coasting Trade; Annual Value of Imports by Sea, including Bullion and Specie; and Annual Value of Exports by Sea, including Bullion and Specie, of various Countries, exclusive of China and South American Republics, but including British Self-Governing Colonies, for the Year 1903.

NOTE.—Except where otherwise stated the figures refer to 1903. Where it has not been found possible to give the particulars for 1903, the figures for the latest year available have been shown.

Countries.	Aggregate Naval Expenditure on Seagoing Force.	Aggregate Revenue.	Aggregate Tonnage of Mercantile Marine.	Annual Clearances of Shipping in the Foreign Trade.	Annual Clearances of Shipping in the Coasting Trade.	Annual Value of Imports by Sea, including Bullion and Specie.	Annual Value of Exports by Sea, including Bullion and Specie.
BRITISH EMPIRE	£	£	Tons.	Tons.	Tons.	£	£
United Kingdom	35,525,732 (a) (Year ended 31st Mar. 1903)	141,545,579 (Year ended 31st March, 1904)	10,268,604(b)	53,104,212	56,712,642	581,568,012	399,606,910
British India ..	377,339 (c) (d) (Year ended 31st Mar. 1903)	77,434,915 (c) (Year ended 31st March, 1903)	74,385 (c)	5,444,919 (o) (Year ended 31st March, 1903)	13,594,418 (o) (Year ended 31st March, 1903)	74,132,013(c) (Year ended 31st March, 1903)	92,702,825 (c) (Year ended 31st March, 1903)
SELF-GOVERNING COLONIES (h)							
Australian Commonwealth:							
New South Wales... ...	—	12,870,098 (Year ended 30th June, 1903)	122,855	2,542,287	No Returns	13,977,917	18,861,213
Victoria ...	—	7,962,344 (Year ended 30th June, 1903)	113,126	1,005,501	No Returns	12,339,615	11,185,012
South Australia (except Northern Territory)	—	2,837,795 (Year ended 30th June, 1903)	57,589	599,484	No Returns	3,174,744	3,592,754
Northern Territory	—	62,411 (Year ended 30th June, 1903)	643		No Returns	48,665	45,617
Western Australia	—	3,996,469 (Year ended 30th June, 1903)	21,612	777,896	No Returns	4,228,554	9,458,125
Tasmania ...	—	1,024,436	17,782	374,931	No Returns	791,438	1,296,670
Queensland ...	—	4,185,125 (Year ended 30th June, 1903)	23,902	349,095	3,943,866 (g)	3,249,627	3,726,975
Total: Australian Commonwealth	259,869 (q)	32,938,678 (f)	357,509	5,649,194 (i)	—	37,810,560 (p)	48,166,366(p)
New Zealand ...	13,366	6,464,198 (Year ended 31st March, 1903)	106,619	1,113,165	9,266,980	12,788,675	15,010,378
African—							
Natal	25,628	4,334,175 (Year ended 30th June, 1903)	2,241	2,005,396 (j)	Nil	16,221,617 (l)	3,302,818 (k)
Cape of Good Hope	62,500	11,701,150 (Year ended 30th June, 1903)	3,681	5,690,115 (i)	5,224,782	34,480,111 (l)	25,714,440 (k)
American—							
Dominion of Canada ...	—	13,574,286 (Year ended 30th June, 1903)	683,147	7,790,659 (m) (Year ended 30th June 1903)	21,705,288(m) (Year ended 30th June 1903)	27,401,000 (n) (Year ended 30th June 1903)	33,226,000 (n) (Year ended 30th June, 1903)
Newfoundland	296 (r) (Year ended 31st Dec. 1903)	478,542 (Year ended 30th June, 1902)	121,293	877,020 (Year ended 30th June 1903)	No Returns	1,743,100 (Year ended 30th June 1903)	2,050,726 (Year ended 30th June, 1903)

NOTE.—The above particulars with regard to Naval Expenditure have been furnished by the Admiralty. The remaining particulars have been extracted either from Board of Trade Returns or from the Official Returns of the various British Possessions.

REMARKS.

(a) Of this total £32,327,715 was ordinary expenditure, and £3,198,017 was expenditure under the Naval Works Act, 1901 (outside Navy Votes).

(b) Including the Isle of Man and Channel Islands.

(c) The rupee has been converted into sterling at the rate of 1s. 4d. the rupee.

(d) Including (1) £100,000 contribution towards His Majesty's ships on the East Indian Station, and (2) £61,600 subsidy to the Admiralty for manning and maintaining "His Majesty's ships and vessels for the Naval Defence of India." The balance represents expenditure on the Marine Department.

(e) In addition to the vessels registered under the Imperial Act of 1894, India owns some vessels of small tonnage registered under the Indian Act X. of 1841; these are not included in the table.

(f) The Revenue figures given for each State include the sums collected by the Commonwealth Government.

(g) Including the tonnage of vessels (2,712,332 tons) engaged in coasting voyages terminating beyond the State.

(h) The revenues of these Colonies are exclusive of loans raised.

(i) Excluding inter-State shipping.

(j) Exclusive of the tonnage of transports.

(k) Including the value of gold, the produce of South African Colonies, brought into the Colony overland, and exported by sea.

(l) Including the value of goods entered for removal to other South African Colonies.

(m) Exclusive of the tonnage of vessels (8,706,482 tons) trading on the rivers and lakes between Canada and the United States.

(n) The value as estimated by the Canadian authorities of the Imports and Exports by sea. The value of *total* Imports and *total* Exports was £49,583,075 and £46,424,665 respectively.

(o) Including native craft.

(p) Excluding Inter-State trade.

(q) This amount is made up as follows:—

	£
Contribution to the Imperial Navy in the year ended 31st March, 1904	209,419
Estimated expenditure on Naval Forces for the year ended 30th June, 1904	42,637
Estimated expenditure on ships and Armaments for the year ended 30th June, 1904	7,813
Total	£259,869

The difference in dates is accounted for by the fact that the financial years of the United Kingdom and of the Australian Commonwealth do not end on the same date.

(r) The contribution from Newfoundland in respect of the maintenance of a Branch of the Royal Naval Reserve in the Colony, for the year ended 31st March, 1904, was not received before the close of the year.

Countries.	Aggregate Naval Expenditure on Seagoing Force.	Aggregate Revenue.	Aggregate Tonnage of Mercantile Marine (a).	Annual Clearances of Shipping in the Foreign Trade (b).	Annual Clearances of Shipping in the Coasting Trade (b).	Annual Value of Imports by Sea, including Bullion and Specie.	Annual Value of Exports by sea, including Bullion and Specie.
	£	£	Tons.	Tons.	Tons.	£	£
Russian Empire	12,349,567	218,676,000	678,594 (1902)	11,086,415 (d)	19,136,898 (d) (1902)	29,516,000 (e) (f) (1902)	58,892,000 (e) (f) (1902)
Germany ...	10,252,012(c) (Year ended 31st March, 1904)	91,349,000 (Year ended 31st March, 1904)	2,203,804 (1902)	15,385,805 (1902)	4,510,065 (1902)	333,775,000 (g)	272,876,000 (g)
						Metric Tons.	Metric Tons.
Netherlands ...	1,389,740	13,833,000	395,760	10,487,199	No Returns	14,078,000 (h)	4,478,000 (h)
						£	£
France	12,538,861	143,307,000	1,217,614 (1902)	19,603,507 (1902)	7,088,902 (1902)	183,427,000	147,985,000
Portugal ...	613,158 (Year ended 30th June, 1904)	11,877,000 (Year ended 30th June, 1903)	118,606 (1901)	12,660,946	1,265,540	17,281,000 (g)	11,132,000 (g)
Spain	1,052,400 (1904)	38,773,000	811,102 (1902)	16,008,886	13,855,089	30,028,000	32,323,000
Italy	4,840,000	77,763,000 (Year ended 30th June, 1903)	1,044,758	24,788,635	11,636,070	82,185,000 (g)	62,396,000 (g)
Austria-Hungary	2,039,200	Austria. 75,378,000 (1902) Hungary. 45,249,000 (1902)	Austria. 254,359 (1902) Hungary. 90,288 (1902)	Austria. 2,678,453 (1902) Hungary. 1,075,356 (1902)	Austria. 11,737,494 (1902) Hungary. 1,264,874 (1902)	14,766,000 (e)	14,593,000 (e)
United States (Year ended 30th June)	16,824,058 (Year ended 30th June, 1904)	144,713,000	888,776 (i)	24,823,164 (k)	No Returns	208,100,000	284,407,000
Japan	2,354,904 (Year ended 31st March, 1904)	25,518,000 (m) (Year ended 31st March, 1904)	979,423 (l)	13,584,079 (m)	No Returns	33,295,000 (m)	36,213,000 (m)

NOTE.—The above particulars with regard to Naval Expenditure have been furnished by the Admiralty. The remaining particulars have been extracted from the Official Returns of the various countries mentioned, except in the case of Russia and Spain, for which countries the particulars relating to Revenue have been extracted from the "Bulletin de Statisque, etc.," 1903, published under the authority of the French Minister of Finances.

REMARKS.

NOTE.—The *actual* Naval Expenditure for any year is seldom known—never immediately—the figures given, therefore, are the sums voted.

With regard to the revenue and commerce of foreign countries, in converting the foreign currencies into £'s sterling the approximate par value of the foreign money has been taken.

(a) The figures relating to the tonnage of the Mercantile Marine are given in gross tons in the case of Portugal, Spain, and the United States, and in net tons in all other cases.

(b) The figures relating to the clearances of shipping are given in gross tons in the case of Portugal and Spain, and in net tons in other cases. The figures for Spain and Japan include the tonnage of vessels (engaged in the Foreign Trade) calling at several ports in the course of the same voyage, the tonnage of such vessels being taken account of at each port of call.

(c) The cost of the maintenance of the forts at naval ports is included.

(d) The figures refer to Russia-in-Europe and the Caucasian ports of the Black Sea.

(e) Special Trade—*i.e.*, imports for home consumption or exports of domestic produce or manufacture, as the case may be.

(f) Trade by European sea-board, including also Finland.

(g) Total Trade. Imports and exports by sea are not separately distinguished.

(h) The particulars as to value of trade by sea are not available.

(i) Registered for over-sea—*i.e.*, foreign trade and whale fisheries.

(k) Exclusive of the tonnage of vessels (6,493,004 tons) engaged in the Lake trade between the United States and Canada.

(l) The tonnage of Japanese vessels is the gross tonnage of vessels of foreign type, excluding junks, but including certain sailing vessels of half-foreign and half-Japanese type.

(m) Including Formosa.

(n) Includes the Coasting Trade between the open ports.

H. Llewellyn Smith.

Commercial, Labour, and Statistical Department,
Board of Trade.

France.—The following are the principal appointments which have been made: Vice-Admirals—M. E. de Maigret, to be President of the Permanent Section of the Superior Council of the Navy; E. M. F. Richard, to be President of the Technical Committee of the Navy. Rear-Admiral—M. A. Massé to be President of the Permanent Steam-Trial Commission. Capitaines de Vaisseau—F. O. Le Cannellier to "Couronne"; G. M. Lefèvre to "Amiral Aube"; E. E. Gervais to "Jurien-de-la-Gravière."—*Journal Officiel de la République Française.*

The Naval Manœuvres.—The Minister of Marine has decided that the Grand Naval Manœuvres shall once more be resumed this year, and they will be held in the Mediterranean. Vice-Admiral Fournier will be in supreme command, and will hoist his flag, according to present arrangements, on board the first-class battle-ship "Brennus" at Toulon; he has selected Capitaine de Vaisseau Chocheprat as his Chief of the Staff.

The manœuvres are to last a month, and will take place during the period when the Reservists are called out, who will be distributed among the different ships. Owing to the forthcoming visit of the English fleet to Brest, only the ships of the Mediterranean Squadrons will take part in the manœuvres, which will be carried out on the coasts of Corsica, Algeria, and Tunis.

Launch.—The new first-class battle-ship "Liberté" was launched on 19th April, from the Ateliers et Chantiers de la Loire, Penhoët, near Saint Nazaire. She is one of the six ships of the "République" class, of the so-called 1900 Programme, but her machinery is slightly more powerful, and there is a difference in her secondary armament. Her principal dimensions are as follows:—Length (between perpendiculars), 439 feet 3 inches; beam, 79 feet 6 inches; displacement, 14,865 tons, with a draught of 27 feet 6 inches.

Protection is afforded by a complete water-line belt of hard steel rising 8 feet above water-line; 11 inches thick at water-line; and 9 feet 3 inches at top amidships, tapering to 7 inches forward, and 5 feet 5 inches aft. The main belt on bow reaches to 9 feet 9 inches below water; above the main belt forward, extending from the stem to just abaft the fore turret, is a belt of 3-inch steel, which is carried up to a height of 8 feet

3 inches above the water. The lower armour deck, which slopes down to lower edge of belt, is 3 inches thick; the protective deck on top of belt is 2·8 inches. The armour on the main turrets and turret bases is 12·8-inch; on the small turrets for secondary armaments, 6·3-inch; casemate, 5-inch; conning tower, 12-inch.

The main armament consists of four 12-inch, 45-calibre guns, mounted in pairs in the turrets, one forward and one aft; the secondary armament consists of ten 7·6-inch Q.F. guns, instead of the eighteen 6·4-inch Q.F. guns carried in the earlier ships; twenty-six 3-pounders, and sixteen 1-pounder, with five torpedo-tubes, two of which are submerged, and the other three behind armour. The ship will have triple engines, which are to develop 18,000-I.H.P., giving a speed of 18 knots, steam being generated by 22 Belleville boilers, fitted with economisers. Under ordinary conditions the coal supply will be 900 tons, but her maximum stowage is 1,850 tons, giving a radius of action of 8,390 knots at 10 knots. Her estimated cost was 26,890,000 (£1,075,600), but her real cost will be nearly £100,000 more.

The Discussion on the Naval Budget 1905.—M. de Lanessan, the ex-Minister of Marine, who was responsible for the 1900 Programme, now approaching completion, has brought forward a definite proposal for building a certain number of ships to replace those which are either obsolete or fast becoming so. It will thus be seen that his proposals do not involve any increase to the present strength of the fleet, but are intended to remedy a serious defect in the present naval system, to which M. Bos, the Reporter of the present Budget, has drawn attention in his Report.

M. de Lanessan proposes :—

1. "The Minister of Marine is to be authorised to construct either in the dockyards or private yards, as may be afterwards determined, the following ships to replace others become obsolete :—

   "6 battle-ships, identical in design, so as to form a homogeneous squadron.

   "3 armoured cruisers, identical in design, to form a homogeneous division (ships now provided in the Budget, 1905).

   "6 destroyers and 81 torpedo-boats of the 1900 Programme, which have not yet been commenced, and for which no provision has been made in this year's Budget.

   "Such a number of submersibles and submarines, as may be determined on by the Superior Council of the Navy.
2. "The characteristics of all these ships are to be embodied in a Budget Act, and are only to be modified by means of a new Act.
3. "Provision to be made for the expenses incurred for the constructions authorised, by the present Act for aiding the ordinary resources of the Budget of each financial year.

   "The necessary credits to be specially shown by the Minister of Marine. To each Budget to be attached a table showing the expenses due to the present programme.
4. "The credits, or any portion not expended at the end of each financial year, to be carried over before the 31st March of the second year, to the following financial year."

In a clear and well-considered statement, M. de Lanessan gives his reasons why he considers the construction of the armoured ships he proposes to be more urgent than that of the submarines and submersibles.

After recalling that the Superior Council of the Navy had, in 1899, expressed the opinion that France should have always ready for service 28 battle-ships, furnishing the nucleus of 4 squadrons for service in European waters, with 4 battle-ships in reserve ready to relieve one or other ships, if wanted, in these squadrons, M. de Lanessan asserts that events in the Far East have confirmed the absolute necessity for battle-ship squadrons.

"No war," he points out, "has better shown than the Russo-Japanese one the preponderance, both on land and sea, of a powerful and easily worked artillery. But, at sea, the power of the guns has for an indispensable corollary the protection of the ship which carries them, and the heavier the guns, all the more important does that protection become. At the present time all the naval Powers are increasing the power of the guns on their armoured ships, and it is not the moment when the protection of armoured ships can be diminished, as other Navies are increasing the thickness of the armour simultaneously with the increase in the power of the guns.

"Relying on experience as well as on reason, one cannot doubt the absolute necessity for armoured battle squadrons to ensure the mastery of the sea; protect transport and the landings of troops; attack the batteries protecting fortified naval ports; protect our own coasts from attacks by the enemy's fleet, and from attempts at invasion, and to act as supports for torpedo-boats and submarines, operating at a distance from their ports.

"The necessity for battle squadrons is imposed on our Navy with an urgency all the more pressing that the youngest Navies are just those which are attaching the most importance to this class of ship, and are developing their most essential qualities, that is to say, offensive power and protection."

M. de Lanessan then calls attention to the naval development of Germany, which in case of a war with France, would probably be assisted by the fleets of Italy and Austria, thus entailing upon her the necessity of maintaining squadrons sufficiently powerful to retain command of the sea:—

"It is of the first necessity that our fleets should be sufficiently powerful to retain command of the sea in our own waters, above all, over Germany. But, if there is one truth more undeniable to-day than another it is that command of the sea can only be obtained by powerful battle-ship squadrons."

These general considerations induce M. de Lanessan to examine the fighting value of the French armoured ships, as compared with similar ships in England and Germany; and he commences with battle-ships.

France will have in 1908, twenty-eight battle-ships, six of which were launched between 1876 and 1885; ten launched between 1886 and 1896; five launched between 1895 and 1899; one special ship, the "Henri IV.," and the six ships of the 1900 Programme. These six last ships should have formed an entirely homogeneous squadron; this homogeneity has, unfortunately, been destroyed by the modifications made in their medium armaments during the construction of some of the ships, which has also delayed their completion.

"With the addition of the five battle-ships of the 'Charlemagne' and 'Suffren' types," continues M. de Lanessan, and a ship, like the "Bouvet," borrowed from another class, we could form a squadron, which, if not exactly homogeneous, would have a fighting value almost comparable to the squadrons actually in commission in England and Germany.

"All our other battle-ships could only be used in the formation of squadrons of the second rank, the units being incongruous, and presenting more than one serious defect, notably in the matter of protection, which scarcely extends above the water-line, and consists of compound steel armour, easily penetrated by modern projectiles. There are also eight coast-defence battle-ships, which, while possessing a certain fighting value, owing to their low speed could not figure even in the second rank squadrons."

In England, if battle-ships, launched since 1891, only are taken into account, there were forty-two available for service on the 1st January of the present year, and ten others were in course of construction; at the end of 1908, the fleet of Great Britain will comprise fifty-two battle-ships of the first rank, of which the oldest will only have been launched in 1891; but among these there are many which, owing to the weakness of their protection, scarcely merit the name of first-class battle-ships, but, nevertheless, the English battle-ship squadrons are actually much stronger than ours, and will be still more so in 1907 and 1908.

"It would be folly on the part of France," continues M. de Lanessan, "to try and rival England in the number of armoured units, as no nation has maritime interests comparable to those of Great Britain, and if our coast-defence is well organised, we have nothing to fear from England in the way of invasion of our Home soil or our Colonial possessions.

"But, although we have no motive for attempting to rival England, none the less we ought to take care that the ships we build should be absolutely up-to-date at the time of their construction as fighting machines; and since our ships are practically only required for the defence of the seas which wash our Home and African territories, the two qualities which we ought most to develop are the *Offensive* and *Protection*. This last quality, particularly, is all the more indispensable, as the number of our ships is very limited.

"The considerable progress made by the German Navy compels us not only to consider the fighting value of our ships, but also their number. It is necessary for us to have in French waters armoured squadrons sufficiently powerful and numerous to assure us absolutely the command of the sea against the Triple Alliance. If we have not this command, both Germany and Italy could attempt to land troops on our Atlantic or Mediterranean shores, whilst our armies are occupied on the Eastern frontier or in the Alps. Germany is increasing the number of her battle-ships to an extent that seems to show a desire on her part to dispute the command of the sea with us in our own waters.

"Taking into consideration, as in the comparison with England, only the units launched since 1891, the German Navy had in service or on trials on the 1st January of this year, sixteen battle-ships. At the same date she had under construction six battle-ships, while the Navy Act of the 14th June, 1900, provided for a total in 1916, of thirty-four battle-ships.

"In 1908, Germany will dispose of twenty-two battle-ships of a fighting value, equal or even superior to those we shall have. If at that date our battle-ships of the 'Patrie' class are not ready for service, the German Navy would, with the help of the Italian and Austrian fleets, be able to

attack our squadrons with every chance of success, because Italy possesses fifteen armoured ships, all possessing some fighting value, while our Ally will have to rebuild the greater part of her squadrons.

"From the above facts it is clear that if France does not press on as rapidly as possible the completion of the 1900 Programme, and also take the necessary steps for replacing, without delay, the ships, which have become obsolete, she will be in a position inferior not only to England, with which country we cannot compete in the number of our fighting units, but also to Germany, whose fleets are of more importance to us than those of Great Britain, because their action will be used to assist in the attack on our land frontiers."

M. de Lanessan does not consider it necessary to much increase the four squadrons of six battle-ships each—with one ship in reserve for each—for the following reasons:—

"The more naval science progresses, the more perfect fighting machines ships become, the more difficult is it to obtain the necessary expert *personnel* for working and managing their varied and complex machinery. This imposes on all the Navies of the world the duty of not exceeding a predetermined number of large units. It is necessary, and also better, to limit the number of units, and to devote all our efforts to increase the fighting values of the ships, and the technical training of the officers and men, on whom devolves the duty of manning and fighting them."

He then proceeds to sum up the conclusions he has arrived at with regard to the battle-ship question:—

"In view of the present condition of our battle fleet, it is absolutely necessary as soon as possible to replace the six battle-ships which were launched between 1876 and 1885, and whose fighting value is much below that of the modern ships of England and Germany.

"If we proceed at once to lay down a homogeneous squadron of six battle-ships to replace those built between 1876 and 1885, they cannot be ready at the earliest before the end of 1908. It is therefore necessary that the question should be taken into consideration without delay. Moreover, there is an undoubted advantage in proceeding simultaneously with the construction of the ships intended to form an identical squadron. For it is only by adopting this method of construction that it is possible to obtain that homogeneity for our squadrons which is now recognised as so valuable, and which we have failed to obtain in the ships built under the 1900 Programme.

"From all this it is impossible not to conclude:—1. That it is absolutely necessary to proceed to lay down without delay six new battle-ships to replace the six obsolete ones; 2. That the new ships should embody all the latest improvements, and should be made, if possible, stronger than ships of a similar type in other Navies; 3. That the heaviest gun power and the best protection possible should be a *sine quâ non* in their design; 4. That the ships should be laid down at the same time and all pushed to completion as rapidly as possible."

M. de Lanessan's proposals in regard to cruisers, destroyers, and submarines we have to defer until next month. — *Le Yacht* and *Le Moniteur de la Flotte*.

GERMANY.—The following are the principal promotions which have been made: Rear-Admirals—Von Ahlefeld, Graf von Baudissin, Galster, to be Vice-Admirals. Kapitäns zur See — Goetz, von Müller, Truppel, Schröder, von Usedom, Kindt, Siegel, Hofmeier, to be Rear-Admirals.

The Estimates for 1905.—The Estimates for 1905 amount to 238,806,205 marks (£11,940,310 5s.), as against 215,996,479 marks (£10,799,823 19s.) voted for 1904, showing an increase of 22,809,726 marks (£1,140,486 6s.). The following are the principal items :—

ORDINARY PERMANENT ESTIMATES.

	Proposed for 1905. Marks.	£ s.	Voted, 1904. £ s.
Imperial Ministry of Marine and Naval Cabinet	1,649,970	= (82,498 10)	79,692 0
Naval Headquarter Staff	237,965	(11,898 5)	9,943 0
Observatories, etc.	359,724	(17,986 4)	17,475 14
Station Accounts Department	471,140	(23,552 0)	21,621 0
Legal Department	142,220	(7,111 0)	5,831 0
Chaplains' Department and Garrison Schools	111,962	(5,598 2)	5,460 15
Pay of Officers and Men	24,275,452	(1,213,772 12)	1,107,833 7
Maintenance of Fleet in Commission	26,690,685	(1,334,534 5)	1,298,589 17
Allowances for Officers and Men	1,743,158	(87,157 18)	86,581 11
Clothing	396,353	(19,817 13)	18,878 15
Barrack and Garrison Administration, etc. ...	1,376,150	(68,807 10)	66,311 19
Lodging Allowance	3,702,463	(185,123 3)	168,430 5
Medical Department	1,827,659	(91,332 19)	82,368 1
Travelling, Transport, and Freight Charges ...	3,337,000	(166,850 0)	162,500 0
Training Establishments	404,168	(20,208 8)	18,210 1
Maintenance of Fleet and Dockyards ...	26,433,886	(1,321,694 6)	1,261,090 18
Ordnance, Arms, and Fortification	9,278,458	(463,922 18)	420,134 16
Accountant-General's Department	734,613	(36,730 13)	35,001 14
Pilotage and Surveying	676,030	(33,801 10)	32,360 9
Miscellaneous Expenses	1,315,334	(65,766 14)	62,709 4
Administration of Kiau-Chau Protectorate ...	96,365	(4,818 15)	4,501 3
Total	105,260,755	(5,263,037 15)	4,965,525 9

SPECIAL ORDINARY ESTIMATES.

Shipbuilding Programme for 1905.

For the construction of the following ships :—

	Marks.	£ s.
The first-class battle-ship "Preussen" (*K*), 4th and final Vote	2,350,000	= (117,500 0)
" " " "Hessen" (*L*), 4th and final vote	2,350,000	(117,500 0)
" " " "Lothringen" (*M*), 3rd Vote ...	4,650,000	(232,500 0)
" " " "Deutschland" (*N*), 3rd Vote ...	4,650,000	(232,500 0)
" " " "O," 2nd Vote	6,050,000	(302,500 0)
" " " "P," 2nd Vote	6,050,000	(302,500 0)
" " " "Q," 1st Vote	2,600,000	(130,000 0)
" " " "R," 1st Vote	2,600,000	(130,000 0)
The first-class armoured cruiser "Yorck" (Ersatz "Deutschland"), 3rd and final Vote	5,270,000	(263,500 0)
" " " "C," 2nd Vote	5,030,000	(251,500 0)
" " " "D," 1st Vote	3,200,000	(160,000 0)
The third-class cruiser "München" (*M*), 3rd and final Vote	1,090,000	(54,500 0)
" " "Lübeck" (Ersatz "Merkur"), 3rd and final Vote	1,090,000	(54,500 0)
" " " "N," 2nd Vote	2,435,000	(121,750 0)
" " " Ersatz "Alexandrine," 2nd Vote ...	2,435,000	(121,750 0)
" " " Ersatz "Meteor," 2nd Vote... ...	2,435,000	(121,750 0)
" " " "O," 1st Vote...	1,225,000	(61,250 0)
" " " Ersatz "Wacht," 1st Vote	1,225,000	(61,250 0)
" " " Ersatz "Blitz," 1st Vote	1,225,000	(61,250 0)

	Marks.	£	s.
For the re-construction of the Ships of the "Brandenburg" class, Additional Vote	1,000,000	(50,000	0)
For the fitting of Cooling and Ventilating Apparatus for Ships' Magazines, 4th and final Vote	720,000	(36,000	0)
For the construction of Gun-boat "C," 1st Vote	800,000	(40,000	0)
" " a River Gun-boat	500,000	(25,000	0)
" " Tender, Ersatz "Hay"	400,000	(20,000	0)
" " a Surveying Vessel	450,000	(22,500	0)
" " a Mine-laying Steamer, 1st Vote...	1,200,000	(60,000	0)
" " Division of Torpedo-boats, 2nd and final Vote...	2,440,000	(122,000	0)
" " Division of Torpedo-boats, 1st Vote	3,100,000	(155,000	0)
For Experiments with Designs for Submarines	1,500,000	(75,000	0)
Total	70,070,000	(3,503,500	0)
For the Gun and Torpedo Armaments of New Ships, and Mines	34,051,000	(1,702,550	0,
Miscellaneous Expenditure: Dockyards, etc.	7,377,450	(368,872	10)
	111,498,450	(5,574,922	10)
From which has to be deducted, credited in the Extra-ordinary Estimates	28,070,000	(1,403,500	0)
Leaving Total...	83,428,450	(4,171,422	10)

Summary.

	1905. Marks.	£	s.	1904. £	s.	Increase, 1905. £	s.
Ordinary Permanent Estimates	105,260,755	=(5,263,037	15)	4,965,525	9	(+297,512	6)
Shipbuilding, Armament, etc.	83,428,450	(4,171,422	10)	3,528,548	10	(+642,874	0)
Extraordinary Expenditure...	50,117,000	(2,505,850	0)	2,305,750	0	(+200,100	0)
Total	238,806,205	(11,940,310	5)	10,799,823	19	(+1,140,486	6)

The *Personnel of the Fleet.* — The following are the numbers of the officers of different ranks on the Active List of the Fleet:—5 Admirals, 8 Vice-Admirals, 19 Rear-Admirals; 67 Captains, 148 Frigate and Corvette Captains, 299 Captain-Lieutenants, 833 Lieutenants, 378 Midshipmen, and 152 Cadets. There are, further, 1 retired Rear-Admiral, 12 retired Captains, 21 retired Frigate and Corvette Captains, and 2 retired. Lieutenants employed on special duties, while 39 Captain-Lieutenants and 65 Lieutenants are employed in ordnance and torpedo duties in the various dockyard and coast stations. The total number of commissioned officers of the military branch actively employed is thus 1,389, showing an increase of 106 over last year, viz.: 1 Vice-Admiral, 2 Rear-Admirals, 4 Captains, 12 Frigate and Corvette Captains, 30 Captain-Lieutenants, and 191 Lieutenants.

The marine battalions have as their staff:—1 Inspector of Marine Infantry, 3 Battalion Commanders, 17 Captains, 12 First Lieutenants, and 22 Lieutenants, showing an increase of 2 Lieutenants over last year.

The Engineering Department consists of:—7 Chief Engineers, 38 Staff-Engineers, 78 Engineers first class, and 118 Engineers, being an increase of 1 Chief Engineer, 3 Staff-Engineers, 5 Engineers first class, and 9 Engineers.

The Medical Department consists of:—1 Medical Director-General (with the rank of Rear-Admiral), 4 Inspectors-General, 39 Fleet Surgeons,

76 Staff-Surgeons, 44 Surgeons, and 44 Assistant-Surgeons, being an increase of 1 Inspector-General, 2 Fleet-Surgeons, 4 Staff-Surgeons, 2 Surgeons, and 2 Assistant-Surgeons.

In the Accountant Department are :—28 Staff-Paymasters and 143 Senior Paymasters and Paymasters.

The Seamen Divisions number :—100 Chief Warrant Officers, 167 Warrant Officers, and 15,089 Petty Officers and men, with 48 Boys' Instructors and 1,052 boys, a total of 16,456, showing an increase of 12 Chief Warrant Officers, 2 Warrant Officers, and 1,166 Petty Officers and men, the number of boys and their instructors remaining the same.

The Dockyard Divisions number :—296 Chief Warrant Officers, 592 Warrant Officers, and 10,981 Petty Officers and men, of whom 784 Chief and Warrant Officers, with 8,915 Petty Officers and men form the engine-room *personnel* of the Fleet, which shows an increase of 58 Chief and Warrant Officers, and 1,742 Petty Officers and men over last year, with a total increase in the divisions of 20 Chief and Warrant Officers and 1,821 Petty Officers and men.

The Torpedo Divisions number:—85 Chief Warrant Officers, 171 Warrant Officers, and 4,257 Petty Officers and men, of whom 48 Chief and Warrant Officers and 1,978 Petty Officers and men are of the seamen class, while 208 Chief and Warrant Officers and 2,279 Petty Officers and men are of the engineering branch; there is an increase in the divisions of 14 Chief and Warrant Officers and 144 Petty Officers and men of the engineering branch, and of 1 Warrant Officer and 89 Petty Officers and men of the seamen branch, or a total increase in both branches of 15 Chief and Warrant Officers and 233 Petty Officers and men.

The Seamen-Artillery Division numbers:—11 Chief Warrant Officers, 23 Warrant Officers, and 2,750 Petty Officers and men, showing an increase of 2 Warrant Officers and 328 Petty Officers and men.

The Marine Infantry numbers :—191 Non-commissioned Officers and 1,038 men—a similar strength to last year.

The Sick Bay Staff consists of :—340 Petty Officers and men of various grades, an increase of 30 over the previous year; and there are 312 ship's stewards, writers, and assistants.

The total strength of the active *personnel* of the Navy stands at 40,672, viz. :—2,040 Officers, exclusive of Midshipmen and Cadets, and 38,632 Warrant Officers, Petty Officers, men and boys, being an increase of 141 officers and 2,562 men over last year.

The Matériel of the Fleet.—The *matériel* of the Fleet, including ships under construction, is made up as follows :—Battle-ships, 37, to be increased to 38 in accordance with the Navy Act of 1900. Of these there are 16 first-class battle-ships completed, 4 in different stages approaching completion, 2 to be launched this year, and 2 others to be laid down during the year, 5 third-class battle-ships, and 8 fourth-class; these last are rated as coast-defence ships, and are, with the third-class ships, to be shortly replaced by first-class vessels.

Large cruisers 14, which is the number fixed by the Navy Act of 1900. Of these there are 5 first-class armoured cruisers completed, 1 approaching completion, 1 under construction, and 1 to be laid down this year. The remaining 6 are protected vessels.

Small cruisers 37, to be increased to 38. Of these there are 30 completed, 3 approaching completion, 1 under construction, and 3 to be laid down.

Details of smaller vessels are not given in the Estimates, but there are 7 first-class gun-boats and 4 river gun-boats.

The torpedo flotilla consists of 58 of what are practically destroyers, although not officially termed so, of which 42 have a displacement of from 400 to 420 tons, 10 a displacement of from 300 to 355 tons, while the remainder are smaller, but have a speed of 26 knots; there are in addition 31 sea-going torpedo-boats and 47 small ones. Six destroyers are under construction, and 6 more to be laid down this year.

The Training Squadron for Cadets and Boys consists of 6 sea-going cadet and boys' school frigates, and there are 6 gunnery training-ships, 1 torpedo school-ship with 1 tender, and 2 submarine mine training-ships.

The Special Service Ships are:—2 Imperial yachts, 3 surveying-ships, 1 stationaire at Constantinople, and a Fishery Protection vessel.—*Etat für die Verwaltung der Kaiserlichen Marine auf das Rechnungsjahr 1905.*

The Turbine System.—Further experiments with turbines will shortly be carried out in the German Navy, as the new third-class cruiser "Lübeck," which is fitted with turbine engines, is now ready for her trials. In this connection it is interesting to note that in France a torpedo-boat, No. 293, fitted with Parsons' turbines, has recently concluded some very successful trials, making a mean speed of 26 knots on her full speed trials, but while her displacement is only 95 tons, that of the German destroyer is 420 tons. The French are having two other boats fitted with turbines on another system, and when ready a series of experimental trials between the three will be carried out. In England turbines have been fitted to the destroyers "Velox" and "Eden," which have given satisfactory results, the speeds recorded being 27 and 26 knots respectively, while the "Amethyst," a third-class cruiser of 3,050 tons, is also fitted with them. The new torpedo-boat "S125," the first to be fitted with turbines, has not answered the expectations which were formed of her. She underwent her preliminary trials with success, and was then sent to Pillau. There her engines went wrong, and for six months she lay idle, awaiting repairs. Her trials were resumed on 4th April, but she again broke down, and she is now at Kiel, awaiting further repairs. The trouble appears to be with her air pumps, and new ones are to be fitted. The great drawback to the turbine is well known, viz., that the propeller can only move in one direction, and cannot be reversed; but this difficulty is overcome by having a central engine fitted for going astern.

New Floating Dock.—A floating dock, which has been built by the firm of Blohm u. Voss, at Hamburg, for the Woerman Steamship Line, was recently completed and sent out to the West Coast of Africa, where it is stationed off Duala, in the Cameroons. The German war-ships on that station, which are all small, will now be able to be docked in their own territory instead of having to proceed to the Cape, as up to the present they have always been obliged to do for docking and repairs. For some time past there has been a small Government floating dock, capable of taking in vessels up to 2,000 tons displacement, moored off Dar-es-Salaam, the principal German harbour on the East Coast of Africa, where the necessary repairs and docking of the ships of the East African station are carried out. The new dock for the Cameroons is much smaller, and is only capable of lifting vessels of 1,200 tons, but that is large enough as far as the present needs of the squadron and coasting trade go.

New Destroyers. — Several new destroyers have been recently taken over by the Admiralty authorities, having completed their

trials successfully. The Germania Yard has received orders to build another division, which will bear the numbers 132 to 137. When completed, the number of the destroyers in the German Navy will be 48, of which 36 will have been built by the Schichau firm. The new destroyers will be vessels of 420 tons displacement, with engines developing 6000-I.H.P., giving a speed of 30 knots. The question is under consideration of giving a more powerful armament to the new destroyers, which at present only carry three 3-pounders, whereas the English destroyers are armed with one 12-pounder and five 6-pounders; the French with one 9-pounder and six 3-pounders; the Japanese the same as the English destroyers; and the Russian one 12-pounder and three 3-pounders.

River Gun-boat. — A new river gun-boat, which is to be sent out to Hong-Kong in sections, has been constructed by the Schichau firm, Elbing. Her dimensions are as follows: — Length, 157 feet 6 inches; beam, 26 feet 4 inches; draught, 2 feet, with a displacement of 168 tons. Her two engines will develop together 1,300-I.H.P., giving her a speed of 13 knots. Steam will be provided by two Thornycroft water-tube boilers. Her bunkers will hold 80 tons. She has a military mast, and is armed with one 3·46-inch 30-calibre Q.F. gun, one 1·97-inch 40-calibre Q.F. gun, and three 0·315-inch machine-guns. Her complement will be 53 officers and men. Her deck-house and sides are protected by a light armour of nickel steel 0·315-inch in thickness.—*Neue Preussische Kreuz-Zeitung.*

UNITED STATES. — *Report of Rear-Admiral Converse.* — Rear-Admiral George A. Converse, Chief of the Bureau of Navigation of the Navy Department, begins his annual report with a statement to the effect that his predecessor, the late Rear-Admiral Henry C. Taylor, before leaving Washington for the last time, wrote the following memorandum in the belief that he himself would prepare the report now before us:—

Immediately following the opening or introductory paragraph of the report, the following subjects should be placed:—

1. *Need of General Board or General Staff.*—State the unwisdom of building more men-of-war unless the means to administer naval affairs efficiently by a General Board or General Staff be authorised.
2. *Ages of Captains.*—Unless these be diminished, disaster is practically certain to ensue.
3. *Increase of Officers Essential to Efficiency.*—At least 50 per cent. or more.
4. *Cruisers.*—Urgent need of more vessels of the cruiser type.

Fully concurring in the opinion that the subjects mentioned by Admiral Taylor are of vital importance to the efficiency of the Fleet, Admiral Converse treats of them separately in the order given. He holds that there is need of an advisory body which shall not be under the control of any Bureau, but responsible directly to the Secretary in matters of naval policy, and that it should be composed of officers whose experience in command afloat has given them an intimate knowledge of the condition and needs of the Fleet, and of the most effective manner of employing it. It is suggested as a proper constitution of the Board, that it should consist of seven members, the Admiral of the Navy to be its President, the Chief of Bureau of Navigation, the President of the Naval War

College, and the Chief Intelligence Officer as members *ex officio*, and the three remaining members to be officers of the line, not lower in rank than commanders, who have completed two years in actual command afloat. The membership should be changed gradually, in order to preserve reasonable continuity of policy and to prevent radical individualism. A larger Board is more unwieldy. The Chief of Bureau of Navigation should be a member, in order that close touch may be kept between the Board and the Bureau of Navigation, since it is manifest that unless the General Board be constantly informed of the employment and condition of the Fleet, its plans and advice become academic, losing their prime requisite of being immediately available and applicable to existing conditions.

Such a Board as is suggested, advisory in character, would not encroach upon the province of any authority now constituted; but, in presenting to the Secretary, in well-digested form, the mature opinions of officers of rank and active experience, would furnish, in such measures, as the Secretary might approve, a definite object toward which the several Bureaus could shape their plans in matters under their respective cognisance, with efficient and economical co-ordination. This Board being a continuous body, its membership changing only a part at a time, would impart continuity as well as sound progress to the policy of the Navy, both these qualities being essential to the highest efficiency of a great military organisation.

As to the age of captains, Admiral Converse presents some comparisons which are exceedingly suggestive. For instance, the captains commanding the five heaviest ships of the Japanese Navy average forty-five and three-quarters years of age, while the captains of United States battle-ships average fifty-seven years, the oldest being fifty-eight and one-half and the youngest fifty-four and one-half, while the average of our flag officers in command afloat is sixty years. Of the flag officers of the Japanese Navy, the superior of all is fifty-six, while four vice-admirals and three rear-admirals average less than fifty, the youngest being forty-six and one-half and the oldest fifty-four, younger than any captain on our list to-day. In the British Navy the captains average forty-eight, the youngest being thirty-three and the oldest fifty-four; in the German Navy the average is forty-eight, the youngest being forty-five and the oldest fifty-four; in the Russian Navy the average is fifty, the youngest being forty-five and the oldest fifty-nine; in the Japanese Navy the average is forty-four, the youngest being thirty-six and the oldest fifty-one, while in the United States Navy the average is fifty-seven and three-quarters, the youngest being fifty-four and one-half and the oldest sixty-one and one-half. If it were practicable in the United States Navy to assign commanders, captains, and rear-admirals, immediately on promotion, to commands appropriate to their new rank, the following table of the numbers and ages of the officers promoted during the past year shows what the situation in our Service would be under the most favourable conditions possible with existing law :—

	Number Commissioned.	Youngest.	Average Age.	Oldest.
Commanders	28	47¼	49¾	53
Captains	18	53¾	55	57¼
Rear-admirals	11	57	59¾	60¼

"In other words," says Admiral Converse, "our youngest commander on the day he attained that rank was older than the average age of Japanese captains and about the same age as the average of English and

German captains, and our youngest captain had passed the compulsory retirement age for Japanese captains and was within sixteen months of the compulsory retirement age for English and German captains. He was also nearly four years older than the average age of the Japanese vice and rear-admirals now in command afloat.

"Furthermore, our information from abroad indicates that in England and Germany the naval administrative authorities do not regard their situation as satisfactory in this respect, and are seeking some effectual means of ensuring that captains and rear-admirals shall reach those ranks younger. In England, six officers under thirty years of age have been recently advanced to commander. In the German Navy, naval authorities are feeling concerned because promotion has become so much slower that in ten years the average age of captains has advanced from forty-four to forty-eight years; of rear-admirals, from forty-nine to fifty-three; and of vice-admirals, from fifty-one to fifty-five.

"It is no reflection upon our commanding officers to say that we should have younger men; it is a statement of fact as regards physical condition due to their age. On the sea the senior officers must bear not only the greatest responsibility, but also the brunt of the fighting—for them no relaxation is possible. The danger of the present condition is real, and cannot well be over-estimated. To fight a war of more than a few months' duration in time, in a climate at all rigorous, and against an enemy approximating in naval strength that of the United States, would unquestionably demand physical endurance of mind, body, and nerves which are rarely possessed by men approximately sixty years of age.

"Physical endurance, moreover, is not the only consideration involved, nor the most pressing one. Experience in command is invaluable in time of war, yet few of our captains could make one cruise in command of a battle-ship, another in command of a squadron, and then still be on the active list, available for a larger command—that of a fleet. Thus, at the time when officers experienced in their duties are most needed, it would be impossible to supply them in the most important places.

"We cannot afford to accept this handicap, especially at a time when all Navies are striving for the highest efficiency in all respects. The Bureau does not now suggest a remedy in specific terms, feeling sure that if the need be recognised by higher authority, satisfactory means may soon be devised; but it is believed that, until a measure is adopted for the compulsory retirement of commanders and captains that do not gain promotion at certain ages, the flow of promotion and the ages of officers in the different grades will not be satisfactory."

In discussing the increase of *personnel*, Admiral Converse shows that in the event of war the Fleet as now constituted would need 504 lieutenants in place of the 350 at present allowed by law, and he therefore recommends that the number be increased to 600, and that the lieutenant-commanders be increased from 200 to 300. He also recommends that two vice-admirals be authorised. On this point he says:—"There is no considerable naval Power except the United States whose largest fleets are not under the flags of vice-admirals. The result is that on the Asiatic station the American Commander-in-Chief is junior to the British, German, French, Japanese, and Russian Commanders-in-Chief, though several of these command fleets less numerous or powerful than his; and in the North Atlantic, the Commander-in-Chief of the most powerful fleet of our Navy is outranked by the British admiral in the same waters, where there is not a single battle-ship under his flag. Moreover, in many cases, owing to the advanced age at which our officers reach flag-rank, the subordinate flag-

officers of foreign commands frequently rank higher than the officer in chief command of our whole naval force."

On the principle that cruisers are indispensable to squadrons of battle-ships, Admiral Converse holds that the United States needs a Cruiser Squadron in the North Atlantic, the South Atlantic, and the Caribbean, and also on the European stations, all these being ready, on the approach of hostilities, to combine in one fleet wherever needed. In the Pacific, our force should consist of a large squadron of cruisers, and on the Asiatic station the battle-ships should be supplemented by a full squadron of cruisers. He adds:—"Counting all of the cruiser type, including the latest ones authorised, our present number is insufficient. Such vessels could not be improvised on the outbreak of war, as the use to which they are put is not scouting only, but duty more combative, demanding qualities of offence and defence which cannot be imparted to a converted vessel. It is recommended, therefore, that our deficiency in this respect be considered by the General Board in connection with the whole subject of ships."

While early events of the war in the Far East seemed to indicate a change in the relative value of torpedoes and battle-ships, Admiral Converse remarks that there are signs that the conviction adverse to battle-ships has been unsettled, if not altogether abandoned in the minds of many, with the receipt of more complete and authentic information of the naval operations of the belligerents. Although a hundred and more torpedo-boats and destroyers have been actually engaged for five months against battle-ships which have been exposed to attack times without number, we have yet to learn authoritatively of a torpedo from a torpedo-vessel causing the total loss of a single battle-ship. Those which have been sunk owed their destruction to submarine mines, anchored or broken adrift, torpedo-vessels not contributing to the result, except by the confusion and sense of greater danger due to their presence. It is evident that in the final summary of losses, the achievements of torpedo-vessels will count less than was at first supposed. It cannot be claimed, therefore, that there has so far been anything to discredit the battle-ship as a type, nor is any such outcome to be expected from this war, whatever may be the casualties among battle-ships.

"To wage successful warfare with a naval force now requires, as it has required in all ages," says Admiral Converse, "a type of vessel which shall combine, in the most effective manner, the qualities of offence, mobility, defence, endurance, self-maintenance. Such vessels are battle-ships, and they constitute the main strength and reliance of a Navy. Other types—armoured cruisers, protected cruisers, torpedo-vessels—possess all or some of these qualities, but in degrees so different as to unfit them for the heavy encounters which the battle-ships are designed to endure without disablement."—*U.S. Army and Navy Journal.*

MILITARY NOTES.

PRINCIPAL APPOINTMENTS AND PROMOTIONS, MAY, 1905.

Generals.—The King has been pleased to appoint His Majesty Alfonso XIII., K.G., G.C.V.O., King of Spain, to be a General in the Army, on the occasion of the anniversary of His Majesty's birthday. General the Right Hon. F. W. Lord Grenfell, G.C.B., G.C.M.G., Colonel-Commandant, The King's Royal Rifle Corps, to be Colonel of the 2nd Life Guards.

Major-General—Major-General and Hon. Lieut.-General J. Sprot to be Colonel of the Princess Louise's (Argyll and Sutherland Highlanders).

Colonels—Colonel R. H. Quill, M.B., from the R.A.M.C., to be Surgeon-General. Lieut.-Colonel and Brevet Colonel J. M. S. Brunker, from h.p., to be A.A.G. at Head-Quarters, and to be granted the substantive rank of Colonel in the Army. Rev. W. B. Dowding, Chaplain to the Forces, Second Class, to be Chaplain to the Forces, First Class. Colonel (local Brigadier-General) G. M. Bullock, C.B., from a Colonel on the Staff, to be a Brigadier-General on the Staff, to command the Troops in Egypt, and to retain the local rank of Brigadier-General whilst so employed. Lieut.-Colonel and Brevet Colonel C. B. Mayne, from R.E., to be an Assistant Director at Head-Quarters, and is granted the substantive rank of Colonel in the Army.

GERMANY.—*New Regulation on the Recruiting of Officers.*—The regulation in force since 1880, not being considered in high quarters as responding to the exigences of the present day, that regulation has been entirely revised, and the text of a new one has been issued, dated the 18th March, 1905. Its official title is the following:—*Offizier-Ergänzungsvorschrift*, or "Regulation for the Recruiting of Officers." An appendix contains also, for the first time, "Instructions for the Working of the Higher Commission of Military Examinations."

Whilst under Para. 1 of the old Regulations *every* soldier having the necessary general education and military fitness might be proposed as a candidate officer (*Fahnenjunker*, or formerly *Avantageur*), the new Regulations limit, exclusive of pupils from the cadet corps, the recruiting of officers to those young men only who are born in one of the Confederated States or in Alsace-Lorraine, and who have been passed by a corps commander as fit candidates for the officer's epaulette. For admission into the cadres of the Regular Army, Reserve officers, as well as those of foreign nationality, must be in possession of a special authorisation from the Emperor. The new Regulations also lay down more clearly than formerly the conditions to be fulfilled for acceptance and posting (*Annahme und Anmeldung*). The following are qualified to receive applications for acceptance as candidate officers, viz., commanders of infantry, cavalry, artillery, and railway corps, as well as commanders of Jaeger, rifle, pioneer, telegraph, and transport battalions, the only

exceptions being commanders of balloon battalions and of rifle detachments. Only those young men may be accepted as *Fahnenjunker* who are bachelors, physically fit and out of debt, whose birth, education, and personal sentiments certify that they will show themselves worthy of forming a portion of the corps of officers. These rules give, as will be seen, considerable discretionary powers to commanders of corps, and leave to their professional conscience alone the onus of deciding whom they may accept as a candidate officer. It should be noted, in addition, that nothing in the new Regulations vitiates the candidature of young men of the Hebrew persuasion to the rank of officer, and they have only in future to find a corps commander disposed to give them a certificate of acceptance. Candidates cannot join the colours until they have completed their 17th year, and until they furnish a proof of possessing the required general education. They all commence as private soldiers.

The candidate-officer may not be proposed for the rank of *Fähnrich* (ensign) until he has reached the age of 23 years and possesses, in addition, a certificate of fitness for that rank. The latter, too, cannot be awarded until the person interested has proved his practical fitness for the Service (*dienstliche Geeignetheit*, and no longer *Qualifikation*) established by a preliminary certificate of good conduct and practical instruction, expressly specifying that the period of actual service in the rank has been 6 months, and not 5 as formerly. All the *Fähnriche* are obliged to go through courses at a War School. The only ones exempt from this obligation are those young men who, already in possession of a university diploma, have, in addition, attended courses during one year, either at a German university, a school of mines, or an academy for forestry.

The knowledge required from candidates for the rank of *Fähnrich* or of officer are enumerated at length in a special appendix to the new Regulation, as well as the amounts of travelling allowances and the various differences of rank between non-commissioned officers. All this was omitted from the old Regulation.

A chapter devoted to cadets points out that corps should, above all, be superior schools with a military organisation and so be true nurseries for officers for the Army (and it may also be added, for the Navy, as this year a certain number of cadets have been posted to the Navy). A new rule formally stipulates that every cadet who has passed the examination for *Fähnrich*, and who, by the wish of his parents, asks to be struck off the strength of the corps before the distribution of cadets has been officially made, may not be proposed as *Fahnenjunker* by any corps commander without the special permission of the Emperor. The object of this rule is to prevent parents from themselves selecting the future garrison of the cadet, as certain service conditions must be taken into account in posting them.

The Instructions for the Higher Commission fix in detail the examinations to be undergone by *Fähnriche* and cadets, and determines very precisely the conditions under which they may be accorded certificates of fitness for the various ranks, viz., *Fahnenjunker* and officer.

New Military Laws.—In March last the Reichstag voted the two following military laws, the drafts of which, submitted towards the end of 1904, have been amended by it on several points :—

I.—*Law on the Peace Effective of the Army.*

Article I.

Sec. 1.—From the 1st April, 1905, the peace effective of the German Army will increase progressively, so as to amount to 504,665 rank and file, in the course of the financial year 1909, and to 505,839 men during the financial year 1910. The following will contribute respectively to this peace effective in the following proportions:—

Prussia, with the contingents under its military administration, 392,979 men; Bavaria, 55,424 men; Saxony, 37,711 men, and Wurtemberg, 19,725 men.

In the event of Wurtemberg being unable, on account of the number of its population, to furnish the portion of the effective required, the Prussian recruiting districts will hand over to the Wurtemberg contingent the number of recruits necessary to make up its proportion. One-year volunteers are not included in the effectives with the colours. Vacancies of non-commissioned officers will not be filled by private soldiers.

Sec. 2.—In consequence of increase of the effective laid down in Sec. 1, the number of units is fixed at the following:—

633 infantry battalions.
510 cavalry squadrons.
574 field artillery batteries.
40 foot artillery battalions.
29 pioneer battalions.
12 lines of communication battalions.
23 transport battalions.

The increase will be so carried out that in the cavalry 10 squadrons will be formed between the 1st April, 1910, and the end of the same budgetary year, the other units being formed before the end of the financial year 1909.

Article 2.

The present law is applicable in Bavaria and in Wurtemberg, by virtue of the special clauses in the Treaty of Alliance of the 23rd November, 1870, as regards Bavaria, and of the Military Convention of the 23rd-25th November, 1870, as regards Wurtemberg.

II.—*Law Modifying Military Obligations.*

Article 1.

Sec. 1.—The first paragraph of Article 59, of the Constitution of the German Empire of the 16th April, 1871, is replaced by the following:—

Every German fit to bear arms belongs for 7 years—as a rule from his 20th completed year to the commencement of his 28th year—to the Regular Army, during the 5 following years to the 1st Levy of the Landwehr, and then, up to the 31st March of the year in which he completes his 39th year, to the 2nd Levy of the Landwehr. During their period of service in the Regular Army, men belonging to the cavalry and horse artillery are obliged to spend their 3 first years without interruption with the colours; men of all other branches of the Service must remain their 2 first years uninterruptedly with the colours.

Article 2.

Sec. 1.—Should it be necessary to reinforce the Army, men who have completed their term with the colours in accordance with the last paragraph of Article 1 may be retained with the colours by order of the Emperor. In that event their retention with the colours will count as a drill period.

Sec. 2.—Men of the dismounted branches of the Service, of the field artillery, and of the transport who have voluntarily completed 3 years of active service in the Regular Army, as well as men of the cavalry and horse artillery who have completed their 3 years' obligatory period of service with the colours will only serve for 3 years in the 1st Levy of the Landwehr.

Sec. 3.—Men of the Landwehr infantry may, whilst belonging to the 1st Levy of the Landwehr, be twice called out for exercises in special formations for a period of from 8 to 14 days. Landwehr cavalry is not called out for exercises in peace time. Landwehr exercises for all the other branches of the Service are carried out under similar conditions as those of the Landwehr infantry; these men either make up special formations or are attached to corresponding Regular units. Their periods of exercises are fixed with regard, as far as possible, to the interests of their civilian profession, and especially with regard to the harvest.

Article 3.

The present law will come into force on the 1st April, 1905.

Article 4.

The present law is applicable in Bavaria and in Wurtemberg by virtue of the special clauses in the Treaty of Alliance of the 23rd November, 1870, as regards Bavaria, and of the Military Convention of the 23rd-25th November, 1870, as regards Wurtemberg.—*Revue du Cercle Militaire* and *Revue Militaire des Armées Etrangères.*

JAPAN.—*Changes in the Japanese Recruiting Regulations.*—By an Imperial Order of the 29th September, 1904, important changes were introduced into the Recruiting Regulations of 1896. In order to better understand these changes, it appears necessary to recall briefly the principal dispositions and the working of the 1896 Regulations. The Japanese Army, then, consists altogether of 4 distinct sub-divisions:—

1. The *Jobi*, or Regular Field Army, consisting of the *Geneki*, or Regular Peace Army, and the *Yobi*, or Reserve of the Regular Army;

2. The *Kobi*, or Army of Reserve, or depôt troops;

3. The *Hoju*, or recruiting Reserve, which has, up to the present, been divided into 2 parts;

4. The *Kokumin*, or National or Territorial Army, also consisting of 2 parts.

Military service is personal and obligatory from 17 to 40 years of age. The calling out of the class only takes place in the course of the year following that in which the young men reach their 20th year. The physical examination is made from April to August of the year of calling to the colours. Young men are divided into 3 great categories, viz.:—

1. Absolutely fit for service.
2. Fit for service.
3. Unfit for service.

After the final elimination of the latter, the recruits are drafted, according to their degree of physical fitness, and taking into account dispensations for family or professional reasons, into one of the 4 following :—

a. Geneki, recruited exclusively, as regards combatants, from the "absolutely fit." The service in it is for 3 years, and the men then pass at once for 4½ years into the *Yobi*; they then put in 5 years in the *Kobi*, and are finally drafted into the *Kokumin*, 1st part, in which they remain until they reach the age of 40.

b. Hoju, 1st part, the service in which is for 7½ years, after which they are drafted into the *Kokumin*, 1st part, where they remain till they are 40 years old. During their first year in the *Hoju*, young men of the class may be called upon, according to the number they have drawn, to serve the regulation time in the *Geneki*, to fill vacancies which may have arisen in its effective.

c. Hoju, 2nd part, for a nominal service of 1½ years, and then, to the age of 40, in the *Kokumin*, 2nd part.

d. Kokumin, 2nd part, for the entire obligatory military service. In this are also included youths from 17 to 20 years of age, previous to the calling out of their class.

The number of the contingent to be enrolled in the *Geneki* is fixed each year by the Minister of War according to requirements, and the necessary numbers are drawn by lot from those returned as "absolutely fit." In the event of there not being enough in this category, men may be taken, by drawing lots, from the next category. The remainder of those returned as "absolutely fit," and, in conformity with a number annually fixed by the War Minister, those classified as "fit" are drafted into the *Hoju*, 1st part. The remainder pass directly, either into the *Hoju*, 2nd part, or into the *Kokumin*, 2nd part.

Changes.

The following are the principal changes introduced into the Recruiting Regulations of 1896 by the Imperial Order of the 29th September, 1904 :—

1. Service in the *Kobi* is increased from 5 to 10 years.

2. The 2nd part of the *Hoju* has been abolished. Consequently all men fit for the combatant branches of the Service, and not enrolled in the Regular Army, are, limited by a number fixed annually, drafted into the *Hoju*.

3. After having served for 7½ years in the *Hoju* (a period corresponding with that which their class comrades, enrolled in the Regular Army, passed in that Army and its Reserve) all the men of this category pass also into the *Kobi*, where they remain for 10 years, to be afterwards drafted into the *Kokumin*, 1st part, for the remainder of their obligatory military service.

The dispositions of the above-mentioned Imperial Order has a retrospective effect, that is to say, that the men who, on its promulgation, were included in the new age limits laid down for the *Hoju* and the *Kobi*, and who, according to the conditions of the 1896 Regulations, were already drafted into the *Kokumin*, 1st part, or in the *Hoju*, 2nd part, are now posted, according to the case, to the *Hoju* or the *Kobi*.

The following table shows clearly the effects of the new Recruiting Regulations :—

Old Regulations of 1896.				Present Regulations of 29th September, 1904.				Differences in periods of Service in each Category when the new Regulations come into full effect.	
Categories.	Duration of Service.	Military Instruction.	Destination.	Categories.	Duration of Service.	Military Instruction.	Destination.	Gain.	Loss.
Jobi ... *Geneki*	3 years ...	Complete	Regular Army in peace-time. To bring up Regular Army to its effective in war, and to ensure the formation of depôt units.	Jobi ... *Geneki* ..	3 years ...	Complete	Regular Army in peace-time. To bring up Regular Army to its war effective and to ensure the formation of depôt units.	No change.	
Jobi ... *Yobi*	4½ ,, ...	Complete		Jobi ... *Yobi* ..	4½ ,, ...	Complete			
Kobi	5 years ..	Complete	To form reserve units for reinforcing the Regular Army in the field.	Kobi	10 years.	Men coming from *Yobi* have a complete military training. Men coming, from retrospective effect of the new dispositions, from the 1st part of the *Hoju* have at most an abridged military training.	To form reserve units, and, if necessary, complete those of the Regular Army. To furnish drivers, etc., for the transport for the Regular Army and the *Kobi*.	5 Classes with complete military training, returning to 1st part of the *Kokumin*. 10 Classes of the 1st and 2nd parts of the *Hoju*, with abridged military training (up to the present).	
Hoju ... 1st Part..	7⅓ years ...	Abridged	To ensure the placing on a war footing of all transport, etc., of the Field Army, and, if necessary, to complete the other units of that Army.	Hoju	7⅓ years.	At the most abridged (up to the present).	To ensure the placing on a war footing of the transport, etc., of the Field Army, and, if necessary, to complete the units of the Regular Army.	6 Classes of men formerly drafted into the 2nd part of the *Hoju*. At present without military training.	
2nd Part	1⅓ years ...	None ...	To furnish, if necessary, reinforcements for 1st part of *Hoju*.						
Kokumin 1st Part	7⅔ years (1)	Complete	National Home Defence.	Kokumin 1st Part...	2⅔ years.	Complete for men who have passed through the *Jobi*. Abridged for men who have passed through the *Hoju*.	National Home Defence.	3 Classes of men who, at first posted to the 2nd part of the *Hoju*, passed directly to the 2nd part of the *Kokumin*.	5 Classes of men who have passed through the Regular Army, and who were consequently thoroughly trained. 10 Classes of men who passed through the 1st part of the *Hoju*, abridged military training. 19 Classes of men coming directly from the old 2nd part of the *Hoju*, with no military training whatever.
1st Part	12⅔ ,, (2)	Abridged.							
2nd Part	18⅔ ,, (3)	None.		2nd Part	20 years (4)	None			
2nd Part	20 ,, (4)	None.			3 ,, (5)				
2nd Part	3 ,, (5)	None.							

(1) Men who have passed through the *Jobi* and *Kobi*. (2) Men coming from 1st Part of the *Hoju*. (3) Men coming from the 2nd Part of the *Hoju*.
(4) Men drafted at once into the 2nd Part of the *Kokumin*. (5) Youths from 17 to 20 years of age before being called to the colours.

Kobi.—Receives all men from 32 to 37 years of age who have passed through the Regular Army, and who, according to the former Regulations belonged to the *Kokumin*, 1st part. From henceforward the resources thus obtained will furnish probably 70,000 drilled soldiers, and will cause a perceptible increase in, if not actually double, the *Kobi* formations. It also receives 10 classes, from 27 to 37 years of age, of men of the old 1st part of the *Hoju*. These men have at most merely an abridged military education, but this could be at once completed; and at any rate from henceforward they may be utilised to replace men of the Regular Army in such positions as drivers, in the transport, and in the various services on the lines of communication. It also receives 10 classes, 27 to 37 years of age, of the men who have been directly drafted into the old 2nd part of the *Hoju*, and passed from thence into the 2nd part of the *Kokumin*. These men have no military instruction.

Hoju.—In consequence of the abolition of the 2nd part, it now forms only a recruiting reserve, increased by 7 classes, from 20 to 27 years of age, of those men who were formerly drafted directly for 1½ years into the 2nd part of the *Hoju*, passing thence at once into the 2nd part of the *Kokumin*. These men have no military instruction, their number is great, for only a portion—about half—of the men passed annually as fit for service, are taken into the Regular Army or into the 1st part of the *Hoju*.

Kokumin (1st Part).—Is decreased by 5 classes, 32 to 37 years of age, of men who, coming from the *Yobi* and after serving 5 years in the *Kobi*, passed into the *Kokumin*, 1st part. These classes return to the *Kobi*. It loses, in addition, 10 classes of men (27 to 37 years of age), who, after having been drafted directly into the *Hoju*, 1st part, passed at the end of 7½ years into the 1st part of the *Kokumin*. These men have at most merely an elementary military education.

Kokumin (2nd Part).—Loses 19 classes, 21 to 40 years of age, of men who, after having completed 1½ years in the 2nd part of the *Hoju*, passed then directly into the 2nd part of the *Kokumin*. These men will now pass 7½ years in the *Hoju*, 10 years in the *Kobi*, and from thence 2½ years in the 1st part of the *Kokumin*. To complete the above information, the general composition of the youths of a class is given in round numbers, taken from an average of the last two years.

Out of 430,000 youths attaining 20 years of age: 60,000 are passed as unfit for service; 30,000 are excused for family and professional reasons; 100,000 passed as absolutely fit for service, of whom 55,000 to 60,000 are enrolled in the Regular Army and the rest drafted either (for the most part) into the *Hoju* or into the *Kokumin*; 150,000 passed as fit for service and drafted either into the *Hoju* or the *Kokumin*.

Before the Chino-Japanese War the annual contingent was about 20,000 men. Since the reorganisation of the Army in 1896 it has been progressively raised to 56,000 in 1903. The effective of thoroughly trained men in the *Yobi*, the *Kobi*, and the *Kokumin* varies, naturally, in the same proportion. As has been already stated, the effect of the new dispositions of the Recruiting Regulations has been to increase the *Kobi* by about 70,000 thoroughly trained men. The figures given below show the result of the recent campaign on the three other sources for the recruiting of the Army, viz.:—

1. Candidates at the Military School.
2. Voluntary engagements from 17 to 20 years of age.
3. Enlistment before the legal age (before drawing lots).

1. *Military School.*

—	Numbers admitted.	Number of Candidates.	Candidates in Excess.
1902	460	1,931	1,417
1903	220	1,321	1,101
1904	90	969	879
1904[1]	400	2,376	1,976
2. *Voluntary Engagements from 17 to 20 Years of Age.*			
1903	368	—	—
1904	1,572	—	—
3. *Enlistments before Legal Age.*			
1903	457	—	—
1904	2,237	—	—

[1]Supplementary course, only passing 8 months at the school.

Revue Militaire des Armées Etrangères.

The following two notes have been communicated by the Director of Military Operations :—

Japanese Use of Field Fortification in the Attack.—Lieut.-Colonel Masahiko Kawimura's Views Quoted in the "Militär-Wochenblatt," p. 1035, of 1905.—"In our method of attack we believe we have perhaps gone one better than our European models by making use of field fortification.

"Entrenchments are not made for defence, but to afford resting places in the advances. In the firing-line the alternate men dig while the others shoot. But we dig differently to European troops. Our active little men dig lying down. They offer no target to the foe, and the front line sinks unnoticed into the ground; the next line finds a bed already made. As we entrench at every stage of the attack, we can dispense with strong reserves. We advance as strong as possible with a large reserve echeloned behind the flanks only."

A Swiss Attaché's Remarks on the Japanese Army. — A correspondent of the Swiss newspaper *Bund* gives the following account of an interview he had with Lieut.-Colonel Gertsch, of the Swiss Army, who has just returned from Manchuria, where he was attached to the Japanese Army:—

"What appears to you, Colonel, the secret of the Japanese victories?"

"Tradition, religion, and education. According to Japanese ideas there is no fate more honourable than to be killed by an enemy; not because there is any hope of a future reward, but because of the honour attaching to it, the memory of which will redound to the credit of the family.

"I have watched Japanese soldiers in the assault, when line after line were hurled to the attack, and although almost mown down to a man, they never desisted until the position was captured, leaving literally mounds of corpses in their wake.

"Before the attack the soldier divests himself of his valise—and only carries his pouch with 150 cartridges—and is off.

"Their organisation is perfect, especially in the Commissariat and Medical Departments. Everything works without friction, and although the Japanese are never in a hurry, they always seem to arrive in plenty of time to tackle the enemy. The Russians, of course, have not made victory too difficult for them; and one can't help feeling that the Japanese would not have succeeded so easily against any other European nation."

"Is it true that the Samurai still play a great rôle in war?"

"Yes, inasmuch as the majority of generals in the field are Samurai. But even here all exclusiveness has been broken down. All the generals in command of the armies in the field are mostly elderly and experienced men, but have energetic and capable officers as their chiefs of staff.

"I myself was attached to General Kuroki, and I knew Oyama, Oku and Nogi."

"What points did you specially observe in Japanese tactics?"

"At the very outset of the battle, the Japanese employ many lines of fire, retaining only a small reserve, they then endeavour to obtain a superiority of fire, and by this means they have been able to defeat a numerically superior enemy.

"The Japanese often adopted a very extended front; for instance, a battalion would at times occupy a frontage of 1 kilometre (1,100 yards). But their tactical formations do not differ from those of the Swiss and German drill books.

"The experiences learnt in this war do not call for any alteration in our Swiss infantry tactics. On the other hand, the lesson to be deduced seems to be a more liberal interpretation of our existing tactical methods. Our officers should rather apply the spirit of our regulations and not adhere so closely to the letter.

"The Japanese skirmishing lines are a model; and although they do not lay too much stress on intervals and distances, neverthelses they keep well in touch with one another.

"As far as is consistent with the plan of attack, the whole company is deployed at once, and at times even a whole battalion of 4 companies.

"Even in the midst of an assault the Japanese use the spade freely, and as soon as the firing-line halts, the men commence to dig.

"The Japanese Cavalry are badly horsed, but, as far as scouting is concerned, they are superior to the Russian Cavalry. The Cossacks are even worse mounted, and are insufficiently trained.

"The Russian guns are vastly superior to the Japanese—having a range of from 6 to 7 kilometres (6,600 to 7,700 yards), whereas the Japanese have only a range of from 4 to 4½ kilometres (4,400 to 5,000 yards). But the Russians were unable to make the most of their advantage, as their fire-tactics were not up to modern requirements.

"With the Japanese, the battery commanders know their work well, and the gunners are well trained, so that their fire was most effective.

"During the whole of an action, the Japanese pour a withering fire over the heads of their infantry into the trenches occupied by the enemy, and continue doing so, until they are occupied by their own men.

"The Russians, on the contrary, disperse their shrapnel broadcast, and obtain, in consequence, no tangible result."

"What is the Japanese commissariat like?"

"Very good. Plenty of rice, meat preserved in a sort of tomato sauce, and dried fish. Rice alone is not sufficient food; it brings on beri-beri; from which a certain number of detachments have suffered.

"This war demonstrates that frontal attacks are not doomed, and many 'situations' declared in our manœuvres 'to be impossible in war-time,' and assaults which one would class as lunatic, have been carried out with great success. Detachments have been known to fire at each other for a long time at 30 metres range. Many is the time that a small detachment, headed by an officer, has hurled itself unsupported against the enemy's position, and has been repulsed—the remnant taking cover, as near as possible, to the position—then another detachment does the same, then a third and a fourth, each remnant joining hands with next comers, and so on, until the position is finally captured.

"Discipline is also absolute, whatever is ordered by a superior is carried out, not necessarily immediately, but slowly and surely. Drill is carried on all through the campaign. Two or three days after each battle individual and collective training and musketry are carried out. All the men, and especially recruits, manifest the greatest zeal and interest in their work.

"In hand-to-hand fighting the Japanese is quite equal to the Russian, as he is very quick, and is armed with a long and dangerous bayonet. When a detachment has captured a position, and is too weak to hold it successfully, the commander simply informs the men they have to die and that's all!"

"Do the Chinese help the Japanese in Manchuria?"

"Yes; but they do not like them, as the Japanese treat them roughly and haughtily."

RUSSIA.—*War Budget for 1905.*—The following are the details of the war budget for the present year, as compared with that of the preceding one :—

	Roubles.	
	1905.	*1904.*
1. Central Administration	3,641,373	3,700,777
2. Local Administration	10,170,390	10,696,780
3. Instruction and Technical Services	12,197,974	11,975,092
4. Medical Department	4,772,046	4,438,395
5. Clothing and Harness	26,063,295	23,410,424
6. Rations	49,901,456	49,067,223
7. Forage	21,401,542	21,204,708
8. Pay	77,744,443	76,680,792
9. Recruiting	21,368,152	21,628,789
10. Building and up-keep of same	18,954,100	20,878,429
11. Artillery Matériel	18,683,713	13,506,398
12. Up-keep and carrying out Artillery Works	2,257,709	2,217,007
13. Transport and Travelling Allowances	14,188,230	13,684,507
14. Despatch of Recruits	2,191,116	1,491,395
15. Training of Reserves	2,778,067	2,849,942
16. Turkestan Administration	1,415,725	1,456,278
17. Gendarmerie	5,536,718	5,271,188
18. Rewards and Assistance	3,962,451	3,986,242
19. Bounties	5,797,162	5,715,410
20. Extraordinary Expenditure	887,757	890,757
21. Kwan-tun Province	9,709,525	9,214,900
22. Change of Armament	23,092,601	25,357,873
23. Various Expenditure	3,083,410	2,913,058
24. Reserve Credit	17,668,953	19,926,728
25. Expenditure for next drill season	8,592,000	8,595,000
Total	367,054,867	360,758,092

New Organisation of Machine Gun Companies. — An order of the 26th September last changes the effective of machine gun companies,[1] which will in future be of two different types, viz. :—

1. Horsed machine gun companies.
2. Machine gun companies on pack animals.

In time of war the former have 8 machine guns on gun carriages, with two-wheeled limbers and drawn by 2 horses, as well as 8 two-wheeled, one-horsed ammunition wagons; the latter possess 8 pack animals for carrying the guns, 16 for carrying the ammunition, and 8 two-wheeled, one-horsed ammunition wagons. Including their train, the peace and war effective of these companies is as follows :—

	1st type, horsed.		2nd type, pack.	
	Peace	War	Peace	War
Officers	4	5	4	5
Rank and file	54	81	58	105
Non-combatants	5	14	5	14
Total	63	100	67	124
Horses	20	56	16	56

The companies are commanded by a captain or lieut.-colonel. The train of each company consists of the following :—

Two-wheeled wagons with exchange pieces for guns -	2
Two-wheeled wagons carrying forge, tools, etc. - -	1
Two-wheeled wagons for officers' baggage - - -	1
Two-wheeled wagons for rations etc. - - - -	5
Field kitchen - - - - - - - - -	1
Total - - - - - -	10

These machine guns are of the Maxim system, and take the infantry cartridge.

The 4 companies which existed in Europe, in the 4th, 6th, 8th, and 16th Divisions, have been broken up, and two new ones have been formed from them in the Far East, in the 2nd and 6th East Siberian Rifle Divisions. At the present time there are only, in addition to the above, the 6 companies attached to the 1st, 2nd, 3rd, 5th, 6th, and 9th East Siberian Rifle Divisions.[2] The type of companies attached to these divisions is not indicated, except as regards the 2nd and 6th Companies inspected by the Tsar at Tsarskoe-Selo on the 22nd November last, which were of the 2nd, or pack, type. The weight of the machine gun of the latter type, with cold water jacket filled, is about 31·7 kilos (about 69·86 lbs.); the weight of the tripod about 20 kilos (about 44 lbs.); and the load for the horse, with pack, amounts to about 83 kilos (about 182·93 lbs.). These machine guns fire 600 shots a minute. Some of the cartridge bands are carried by the pack horses. The number of cartridges allotted to the company are about 70,000. The men are armed with the dragoon rifle and bayonet.

[1] The brigades which consist of 8 batteries leave 2 of them in Europe, as was done by brigades sent previously to the Far East.

[2] The 4th and 7th Divisions were at Port Arthur; the 8th is attached to the Vladivostok garrison.

A short regulation on organisation, attached to the order mentioned above, may be briefly summarised as follows:—

Machine gun companies are posted to infantry divisions or rifle brigades, and constitute a portion of that division or brigade of which they bear the number. For administration and instruction they are attached, if possible, to that infantry regiment which is quartered at the division headquarters. They are directly under the corps commander without forming a portion of a battalion. The company commander is selected by the general commanding the division from amongst the infantry company commanders, who are the most capable and experienced with regard to musketry. They are appointed by the Tsar. The other officers are appointed by ordinary transfer, and may eventually return to their corps to take command of companies. The recruiting of the rank and file is carried out normally, care being taken that the men can read and write, have a good sight and a strong constitution—similar to artillerymen. Non-commissioned officers are made in the instruction squads of the corps to which they are attached. Horses are furnished to companies in accordance with the regulations laid down for artillery. The company winter and summer drills and musketry practices are regulated by a programme laid down for the corps by the commander of that company and approved by the division commander.

NOTE.—There are also some machine guns in the Far East, amongst others those belonging to the 2nd Daghestan Cavalry Regiment and to the Terek-Kouban Regiment of the native Caucasian brigade. The former of these regiments used them successfully during the battle of Liao-Yang. These machine guns were bought by the colonels commanding these regiments, at the rate of 2 per regiment. They are of the Maxim-Nordenfeldt type, with support, and are carried on pack animals. They go everywhere with their regiments, and cost 9,310 francs the pair.—*La France Militaire* and *Revue Militaire des Armées Etrangères.*

SWITZERLAND.—*Budget for 1905.*—The Federal Chambers voted the 1905 budget during their December sitting. As regards the military department, the figures are as follows:—

	Francs.
Expenditure - - - - - - -	31,021,083
Receipts - - - - - - - -	3,061,706
Net Expenditure - - -	27,959,377

The principal receipt is always the tax for exemption from military service. It amounted to nearly 2,000,000 francs, or exactly to 1,983,204 francs in 1903. The most important changes introduced into the budget expenditure are caused by the field artillery re-armament, which reacts on the other branches and departments of the Service.

In 1905 the infantry will recruit 1,000 men less, or 11,000 instead of 12,000. Of these 1,000 men, 700 will be recruited by the field artillery for the requirements of its new batteries. In addition, 150 officers' orderlies should also be recruited in 1905. The effective of men of the line transport also requires a supplement. The recruiting will be increased for three years, at the end of which all the infantry battalions will have their normal effective. At the same time, the recruiting for position artillery will be forced, partly in order to complete some companies, which are not yet up to their normal effective, and partly on account of the formation of the projected howitzer batteries.

To return to the field artillery. Officers, warrant officers, sergeants, and gunners of the 28 present field batteries of the Ist and IInd Army Corps should take part in 1905 in the cadre courses laid down by the Regulation of the 15th April, 1904; the above-mentioned cadres and gunners and drivers, with the exception of those of the three last age classes, should take part the same year in a course of instruction in the new *matériel*.

The following will be called up for purposes of organisation, so as to carry out all the reconstitution work of the park companies, such as entry in small-books, change of numbers and badges of corps, completing of equipment and clothing, etc., men of the Ist Corps park and of the 1st and 2nd depôt parks. Units of the IInd Corps park having to carry out a repetition course in 1905, will execute their reorganisation work at the commencement of the course. The latter will be extended for two days.

The importance of cavalry fire action having been recognised, a credit of 10,206 francs has been given to increase their number of rounds from 60 to 90 per man. For the first time there figures a credit of 30,000 francs in the budget to keep up the Regulation of 5th July, 1904, which provides a subsidy for Army cyclists who purchase regulation bicycles. This subsidy is 100 francs, representing 50 per cent. of the cost of the machine. The period of all repetition courses has been changed to 18 days, instead of 22 and 14 days as laid down formerly.—*Précis from Revue Militaire Suisse.*

Artillery Re-organisation.—In the JOURNAL for April, 1904, certain changes in the Swiss field artillery were noted. As was there mentioned, 72 new batteries of 4 guns of the 7·5-cm. *matériel* were to be formed instead of the former 8·4-cm. type—48 batteries to be furnished by the Cantons and 24 by the Federal Government. Mention was also made of the courses of instruction, consequent on the introduction of the new *matériel*, as laid down by the Federal Council.

On the 27th December last the Federal Council issued regulations regarding the new artillery re-organisation, which the *Journal de Genève* briefly summarises as follows:—

The organisation of the new field batteries of one army corps must be completed before proceeding with the organisation of another. The 72 new batteries will be numbered from 1 to 72, irrespective of whether the units are Cantonal or Federal. These 72 batteries will form 12 regiments, each consisting of 2 brigade divisions of 3 batteries each. The battery numbering will be so arranged that the Ist Army Corps will have from Nos. 1 to 18, forming the 1st, 2nd, and 3rd Artillery Regiments; the IVth Army Corps will have from Nos. 55 to 72, forming the 10th, 11th, and 12th Artillery Regiments.

There are in each army corps a corps regiment and 2 divisional regiments. The regiments are commanded by lieut.-colonels, and exceptionally by colonels; brigade divisions by majors. The new regulations are drafted so as, as far as possible, there may be only one place of assembly, at any rate, as regards the brigade divisions. This is especially the case as regards divisional regiments. Almost everywhere the mobilisation of regiments is possible in 48 hours.

The battery is composed of a captain, 3 to 4 first lieutenants, 138 to 139 non-commissioned officers and men, 21 to 22 saddle horses, 106 draught horses, 4 guns, 10 ammunition wagons, 1 cart, 1 forge, 2 ration carts. The

sergeants are mounted. The landwehr has no field batteries. Its units are recruited as follows:—Men leaving divisional regiments, from 33 to 35 years of age, form the park companies, of which there is one to every two batteries, which gives three park companies to every division, viz.: 1 infantry and 2 artillery. On transfer to the landwehr, men of corps artillery regiments are drafted into position artillery. Drivers furnish the *personnel* of transport, both position and medical; the gunners the *personnel* of a company of position artillery. Finally, on quitting the park companies, men from 40 to 44 years of age form the park depôt companies, one of these companies going to 2 park companies. There are thus 3 depôt park companies per army corps.

In short, the new organisation consists in the Regular Army of 72 field batteries; in the landwehr of 24 park, and 12 depôt park companies furnished by divisional batteries; 5 companies of position artillery transport; 5 companies of medical transport; 5 companies of position artillery, furnished by the corps batteries.

United States. — *Disappearing Coast-Defence Guns.* — One of the lessons that the present war has served to emphasise very strongly is the necessity for giving the greatest protection possible to the gun detachments. On land the question of the efficiency of artillery fire has resolved itself very largely into the question of invisibility. Such is the accuracy of the modern gun, so reliable are the means for finding the range, that when once a battery has been located, unless the cover is particularly complete, the silencing of the guns follows almost as a matter of course; and in the majority of cases it is the gunners, rather than the guns, that have been destroyed.

The question of invisibility is particularly important in the construction of fortifications and the emplacement of their guns. When the important scheme of defence drawn up by the Endicott Board was determined upon, it was decided to make extensive use of the Buffington-Crozier system of disappearing guns, which is called after its inventors. The idea had received considerable attention in Europe previous to its adoption here, and was not, therefore, by any means in the nature of an experiment. The design which was then adopted, and has since been followed with only minor modifications, is probably the most satisfactory type of disappearing gun carriage in use at the present time.

The principal methods of mounting sea-coast guns are the casemate, the barbette, and the disappearing mount. In the casemate system the gun fires through an opening in the masonry or metal wall of the fort, and may or may not be protected by a shield. This is a very complete system of protection; but it has the disadvantage that the arc of fire is generally somewhat limited. A gun mounted *en barbette* is so placed that though part of its mount is below the parapet of the fort, the gun and upper part of the carriage are constantly exposed to the direct observation and fire of the enemy. In this form of mounting the greater part of the gun detachment is exposed to direct fire. In the disappearing system, on the other hand, the mount is entirely below the parapet and fully screened from observation. The gun itself lies also below the parapet during the operations of loading and training, and the whole of the gun detachment is also similarly sheltered.

The carriage is of what is known as the front-pintle form, and its general construction is as follows:—The gun is carried, by means of its trunnions, upon the upper ends of a pair of massive rocking levers, one on

each side of the gun, which are themselves pivoted at their mid-length to the top sliding gun carriage. At the opposite end of these levers is suspended by means of a pair of rods a massive lead counter-weight, which is sufficient, when released, to depress the outer ends of the two levers, which, pivoting at their centre on the top carriage, serve to raise the gun to the firing position. Near the breech of the gun are pivotally-connected a pair of elevating rods, which co-act with the trunnion levers in steadying the gun and keeping it in its proper relation to the carriage as it is raised or lowered. The top carriage is formed with two hydraulic cylinders, one on each side, in one piece of gun iron. In each cylinder are two throttling bars of steel, which pass through notches in the piston and serve to regulate the size of the orifices for the flow of the liquid past the piston, and present an increasing resistance to the recoil of the gun. The action of the system in recoiling is such that no matter at what elevation the gun may have been fired, it will have practically the same inclination to the horizontal, about 7°, when in the loading position.

The racer is of cast steel, and the base ring of gun iron. The base ring is fastened to the platform with a large number of heavy holding-down bolts. The traversing of the gun is accomplished by means of cranks operated by hand, and the elevation by means of elevating hand-wheels, mounted on a shaft passing through the mount, upon which are pinions of bronze, gearing into spur-wheels of cast steel. On the shaft with these are pinions of bronze, which gear into elevating racks attached to the lower end of the elevating rods.

When the gun is in the lowered position, it will be evident that all the operations of sponging, loading, traversing, and elevating may be carried through without exposing any of the gun detachment, except the man at the telescopic sight, whose head will be exposed above the line of the parapet. The breech of the gun in the lowered position is always at a predetermined height above the platform, so that when the ammunition is brought forward on its truck, it is at just the right height to be thrust from its tray into the breech. The action of the carriage is as follows:—Upon firing the piece the central pivot of the levers moves horizontally to the rear, carrying the top carriage with it. The lower end moves vertically upwards, being constrained by the cross-head guides. The gun moves downwards and to the rear in the arc of an ellipse. The energy of the recoil is absorbed partly by raising the counter-weight and partly by the resistance of the hydraulic cylinders. After loading, the pawls are tripped, and the greater moment of the counter-weight enables it to raise the piece into battery. The return to battery is softened by the hydraulic counter-recoil buffers in the cylinders, forming a sort of dashpot.

An attacking fleet would be practically at the mercy of such a battery of disappearing guns. At the outset it would be ignorant of the location of the fort, and the use of smokeless powder would render the detection of the guns during the few seconds that they showed above the parapet a difficult matter. The only possible chance to place a shell inside the fort would be by making use of high-angle fire; and this is impracticable in the modern war-ship as at present constructed, for two reasons: first, that the existing gun carriages will not allow the breech to be sufficiently depressed to admit of such fire; and secondly, that the existing decks are not strong enough to withstand the heavy vertical strain of the recoil. The aiming of the gun is all done under shelter. By means of a "range finder" and the "converter board," the gunner can lay the piece with perfect accuracy while it is yet below the level of the

parapet. Gun for gun, such a battery has an enormous advantage over the floating fortress, for it would have in its favour:—1. Invisibility. 2. Absolute protection from gun fire. 3. Absolutely steady platform. 4. Absolute determination of the range and bearing of the enemy. To this must be added the moral effect upon the courage and endurance of the gun crews, resulting from their superior protection.—*Scientific American.*

WAR NOTES.

The great battle of Saturday and Sunday, the 27th and 28th of May, 1905, off the island of Tsushima, in the Straits of Korea, which has resulted in the practical annihilation of the Russian fleet, under Rear-Admiral Rojdestvensky, will certainly take rank as one of the decisive sea-battles of the world.

It was on 14th August of last year that Rojdestvensky hoisted his flag at Libau on board the new first-class battle-ship "Kniaz Suvaroff," in command of what was called the Baltic Fleet, but the official designation of which was really the Second Division of the Pacific Fleet, the fitting out of which for sea had been feverishly pushed on since the disaster to the Russian squadron at Port Arthur on the night of the 9th February had become known. The constitution of the fleet was as follows:—

First Division.

First-class battle-ships.—"Kniaz Suvaroff" (flag-ship of Commander-in-Chief), "Borodino," "Imperator Alexander III.," "Orel."

Second Division.

First-class battle-ship.—"Osliabya."

Second-class battle-ships.—"Sissoï-Velikie" (flag-ship of Rear-Admiral Fölkersahm), "Navarin."

Cruiser Division.

Belted cruisers.—"Admiral Nakhimoff," "Dmitri Donskoi."

Second-class cruisers.—"Oleg," "Aurora."

Third-class cruisers.—"Almaz" (flag-ship of Rear-Admiral Enquist), "Svietlana," "Jemtchug," "Izumrud."

Destroyers.—"Bravy," "Bystry," "Boïny," "Bodry," "Bedovy," "Bezoupretchny"; with the auxiliary cruisers "Ural," "Don," and "Volga," the hospital-ship "Orel," the factory-ship "Kamtchatka," and some colliers. The "Oleg" and "Jemtchug" did not leave Libau with the main fleet, but followed in November, convoying some more destroyers.

The First Battle-ship Division was composed of the four latest completed ships, and were sister-ships to the "Tsarevitch," now lying dismantled at Kiau-chau; the "Osliabya" was a sister-ship to the "Peresviet" and "Pobieda," both of which formed part of the Port Arthur fleet; while the "Sissoï-Velikie" and "Navarin" were smaller and comparatively speaking old ships. Both the belted cruisers were obsolete vessels, while the "Oleg," "Aurora," "Almaz," "Jemtchug," and "Izumrud," the two last being improved "Noviks," were all new.

The fleet left Libau on the morning of the 15th October, and after some delay caused by the North Sea incident, arrived at Tangier on the evening of the 3rd November.

The First Division with the "Osliabya" and the larger cruisers, under the command of Rojdestvensky himself, left Tangier on the 5th November, and after touching at Gaboon, one of the ports in the French Congo territory, on the 26th November, where he coaled, and at Angra Pequena on the 11th December, finally arrived on the 1st January at Ile Sainte Marie, off Madagascar. At this port and at Nossi-Bé he remained until 16th March, and here he was rejoined, on 3rd January, by Rear-Admiral Fölkersahm, who, with the "Sissoï-Velikie," "Navarin," the division of small cruisers under Rear-Admiral Enquist, and with the destroyers, had come through the Suez Canal and down the Red Sea.

In the meantime the formation of a Third Division was being pushed on at Cronstadt and Libau consisting of the second-class battle-ship "Imperator Alexander II," the coast-defence battle-ship "Admiral Ushakoff," "Admiral Seniavine," and "Admiral Apraxine," with the belted cruiser "Vladimir Monomakh." This squadron, with colliers and special service vessels, left Libau on 15th February, under the command of Rear-Admiral Nebogatoff, passed through the Suez Canal on the 25th March, arriving at Jibutil on 5th April, which he left again on the 7th for the East, although his destination was for some time veiled in mystery.

On 16th March, Rojdestvensky at last left Nossi-Bé, but it was not until 8th April, when his fleet was sighted steaming past Singapore, that it became known that he really intended entering Chinese waters. On 14th April he anchored in Camranh Bay, a fine harbour on the French coast of Cochin-China, some forty miles to the north of Saïgon; here he coaled and replenished his stores and provisions. On 22nd April, yielding to pressure from the French Government, he left Camranh Bay, but only to proceed to Hon-kohe Bay, another sheltered anchorage, some fifty miles further north, again, where he anchored on 2nd May; off this port he was joined, on the 8th or 9th ult. by Admiral Nebogatoff and his division, for which he had been waiting, and which had been sighted passing down the Straits of Malacca on 4th May and Singapore on the 5th.

Finally on the 19th May Rojdestvensky left Hon-Kohe Bay and the coast of Cochin-China; for some days his movements were still veiled in uncertainty, contradictory reports from passing steamers being received. The first intimation that he was at last really steering north was the reported arrival off the mouth of the Yang-tse on 26th May of some 17 of his colliers and volunteer cruisers; and this was followed on Monday, the 29th ult., by the publication of telegrams from Tokio of the previous day announcing that the two hostile fleets had engaged in the Straits of Korea on the 27th, and that the battle was still proceeding. A later telegram on the same day announced the complete defeat and practical annihilation of the Russian fleet.

We give the following official despatches from Admiral Togo, as they were received at the Japanese Legation:—

First report, received morning of 27th May:—

"Immediately on receipt of report that the Russian squadron was in sight, our combined squadrons started for attack. The weather is fine to-day but with heavy seas."

Second report, received night of 27th May:—

"Our combined squadrons attacked Russian squadron to-day near Okino-Shima, to the south-east of Tsu-Shima, and defeated it, sinking at least four ships and inflicting heavy damage upon others. Damage to our ships is insignificant. Our destroyer and torpedo flotillas delivered attack after sunset."

Third report, received morning 29th May :—

"Main force of our combined squadrons has continued pursuit since 27th, and attacked on 28th at Liancourt Rocks, north-east of Okino-Shima, a group consisting of 'Nicholas I.,' 'Orel,' 'Seniavin,' 'Apraxine,' and 'Izumrud.' The 'Izumrud' fled, while remaining four vessels surrendered. No damage towards our ships. According to statements of prisoners, the vessels sunk in the engagement of 27th May were 'Borodino,' 'Alexander III.,' 'Zemtchuz' ('Jemchug'), and three other ships. Rear-Admiral Nebogatoff and about 2,000 Russians were taken prisoners."

The following was also received on 29th May :—

"The following are damages sustained by the enemy (in addition to those given above) since the commencement of the battle as reported by commanders not under immediate command of Admiral Togo and by observation stations:—'Admiral Nakhimoff,' 'Dmitri Donskoi,' 'Svietlana,' 'Admiral Ushakoff,' 'Kamchatka,' 'Irutschush' (?), and three destroyers sunk. 'Vladimir Monomakh' foundered (? grounded) and afterwards captured. One special service ship (whose name is unknown) and one destroyer captured. The Russian losses definitely known so far may be classified as follows :—Sunk : Two battle-ships, one coast-defence ship, five cruisers, two special service ships, and three destroyers. Captured: Two battle-ships, two coast-defence ships, one special service ship, and one destroyer. It is not yet clear whether the three vessels stated by the prisoners to have been sunk are included in the above list or not. There are more than 1,000 prisoners besides the 2,000 taken by the main force of our combined squadrons. The naval engagement is still in progress, so that it will take some time before the final results can be known."

Fifth report, received in the afternoon of 30th May :—

"The main force of our combined fleet, upon accepting surrender of the remaining Russian main force near Liancourt Rocks, in the afternoon of 28th May, as already reported, stopped pursuit, and while engaged in disposition of the surrendered ships, found in south-western direction the coast-defence ship 'Admiral Oushakoff.' Thereupon 'Iwaté' and 'Yakumo' were immediately despatched to pursue her. They invited her to surrender, but invitation being refused, they sank her at 6 p.m., and rescued her remaining crew of over 300 men. Cruiser 'Dmitri Donskoi' was also found at 5 p.m. in north-western direction, and, being immediately overtaken, was fired upon vigorously by our Fourth Division and the Second Destroyer Flotilla. She was attacked at night by Second Destroyer Flotilla and found next morning aground south-eastern shore of Urleung Island, off the Korean coast.

"Our destroyer 'Sazanami' captured, towards evening of 27th May, in the south of Urleung Island, the Russian destroyer 'Biedovy,' wherein were found Admiral Rojdestvensky and another admiral, both severely wounded, together with 80 Russians, including staff officers, from the flag-ship 'Prince Souvaroff,' which sunk on 27th May. They were all taken prisoners. Our cruiser 'Chitosé,' while cruising northwards in the morning of 28th May, found and sank another Russian destroyer. Our cruiser 'Niitaka' and destroyer 'Murakumo' attacked, also at noon 28th May, a Russian destroyer, which finally went aground.

"According to various reports hitherto received and statements of prisoners, the result of the battle from 27th to 28th May is as follows :—'Prince Souvoroff,' 'Alexander III.,' 'Borodino,' 'Dmitri Donskoi,' 'Admiral Nakhimoff,' 'Vladimir Monomakh,' 'Jemchug,' 'Admiral Ousha-

koff,' one converted cruiser, and two destroyers sunk; and 'Nikolai I.,' 'Orel,' 'Admiral Apraxine,' 'Admiral Seniavine,' and destroyer 'Biedovy' captured. According to the statement of prisoners, the 'Oslyabya' sank at about 3 p.m. 27th May, and the 'Navarin' also sank. 'Almaz' was on 27th May observed disabled and in sinking condition, but her final fate is yet unknown. The full particulars regarding injury to our ships are not yet to hand, but so far as I could ascertain none are seriously injured, all being still engaged in operations. The total casualties are not yet ascertained. Those of the First Division are little over 400. H.I.H. Prince Yorihito is in excellent health. Admiral Misu was slightly wounded in the engagement of 27th May."

Sixth report, received in the afternoon 30th May:—

"The loss of 'Oslyabya' and 'Navarin' is confirmed. 'Sissoi Veliky' is also definitely reported to have (?) sunk on the morning of 28th May."

Seventh report, received on the morning of 31st May:—

'From reports of various divisions under me, it appears that the 'Oslyabya,' being seriously damaged at the early stage of the battle of 27th May, left the line and sank at 3 p.m.

"The 'Sissoi Veliky,' 'Admiral Nakhimoff,' and 'Vladimir Monomakh' already suffered heavily at mid-day, 25th May (? 27th), and at night they were so damaged by our destroyer and torpedo-boat flotillas that they were completely put out of action. They were discovered next morning drifting near Tsu-Shima by our converted cruisers 'Shinano Maru,' 'Yawata Maru,' 'Tainan Maru,' and 'Sado Maru,' but sank before they could be captured. Their survivors of about 915 were taken up by above-mentioned converted cruisers and people on coast.

"It is certain from the statements of prisoners that the 'Navarin' was struck by four torpedoes from our torpedo flotilla on 27th May and sank. Commander of 'Niitaka' reports that the 'Svietlana' was discovered at 9 a.m. of 28th May off Chekuten Bay, Korea, and sunk by 'Niitaka' and 'Otowa.' The 'Aurora' and 'Almaz' are suspected to have been sunk during our torpedo attack on the night of 27th May. Respecting the 'Jemchug,' mentioned in the list of sunken ships in the previous report, her fate is uncertain, and her name has to be cancelled from that list pending reliable information. After all, eight battle-ships, three armoured cruisers, and three coast-defence ironclads, which formed main force of the Russian Fleet, were sunk or captured, and most of the second-class cruisers and other subsidiary vessels were destroyed, so that the whole Russian Squadron was practically annihiliated by this battle.

"Regarding the damages of our fleet, the subsequent reports show that during the night attack of the 27th the torpedo-boats 34th, 35th, and 69th sunk, but most of their crews were rescued by their companions. Otherwise no ship whatever was lost. The damages to the larger vessels, including destroyers, were very slight, and none of them was incapacitated for action. Our total casualties now estimated at 800.

"As nearly whole of the Japanese and the Russian Fleet were engaged in the battle its field greatly extended. Moreover, the weather being misty, it was impossible to see more than five miles. I was, therefore, unable to keep in sight all the divisions under me even in daytime. Besides, the battle occupied two days and nights, and our various divisions attacked the enemy, who scattered in every direction, and some are still engaged in duties subsequent to battle, so that it will be some days before detailed reports can be forwarded."

Eighth report, received on 31st May :—

The commander of the 'Kasuga' returned this afternoon with survivors of the 'Dmitri Donskoi,' and reports that the 'Dmitri Donskoi,' in the morning of 29th May, opening Kingston valve, sank, and those on board, including survivors from the 'Oslyabya' and the destroyer 'Buini,' landed Urleng Island. It appears that the 'Buini' took on board Admiral Rojdestvensky and the staff before the sinking of the flag-ship, afternoon 27th May, and also 200 from the 'Oslyabya,' but, finding navigation difficult, transferred Admiral Rojdestvensky and the staff to the 'Biedovy,' and while running northward met in the morning of 28th May the 'Dmitri Donskoi,' to which all on board were transferred, and the 'Buini' sank herself. The 'Oslyabya,' according to her survivors, had the conning-tower struck at the first straight shot of battle on 27th May, and Admiral Fölkersahm was killed, and after a succession of shot, sank about 3 p.m. The survivors of the 'Dmitri Donskoi' say that they saw two destroyers sunk in the thick of battle at noon on 27th May. If this is true it means that the five Russian destroyers were sunk."

Admiral Togo has sent the following despatch :—

"The special-service steamers in the enemy's fleet which were sunk in the battle of 27th May have now been ascertained to be the 'Ural,' 'Kamtchatka,' and one other.

"Thus among the Russian war-ships and steamers which were present at the battle, those whose fate is unknown are the 'Oleg,' 'Aurora,' 'Izumrud,' the 'Almaz,' three steamers, two destroyers, and one tug-boat. The rest are all sunk or captured.

"The 'Oleg' and 'Aurora' during the battle were under the fire of our second and third sections, and were seen frequently in flames. Therefore, even if they escaped, I believe that a considerable time must elapse before they can recover their fighting power."

It has since been reported that the "Aurora," flying the flag of Rear-Admiral Enquist, accompanied by the "Oleg" and "Jemchug," arrived at Manila on the evening of the 3rd inst. All three vessels sustained considerable damage in the action, and serious losses in killed and wounded. As the repairs will take some little time, the ships, with the officers, and men, are to be interned until the end of the war.

The Russian destroyer "Bodry" was towed into Shanghai on the 4th inst. by a British steamer, having been picked up at sea. She reported she had been drifting for six days with 180 men, representing the crews of three other vessels, on board. She had only one day's water and but little food left. She will be interned, and her officers and men have been transferred to one of the transports. All the Russian transports left at Wusung are now to be interned and their crews released on parole.

CORRESPONDENCE.

THE WEARING OF PLAIN CLOTHES BY SOLDIERS OFF DUTY.

To the Editor of the JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION.

SIR,—Some years ago I wrote a letter to a Service paper advocating a regulation permitting all soldiers to wear plain clothes, when off duty, just as the Native Army in India is allowed to do. My letter was not accepted, and in subsequent conversation with officers my proposition has been condemned on the ground that it is the uniform itself which attracts recruits. I would like to call more attention to the last two paragraphs of the letter from "Ex-Sergeant," published on p. 13 of the *Times*, of Thursday, the 27th April. In this letter a man, who must know intimately the feelings of those disposed to enlist, and expresses himself with great ability, gives it as his conviction that: "No factor would achieve such desirable results as the grant of the privilege of wearing plain clothes when off duty, and freedom to leave barracks at all such hours."

It is a mistake to suppose that the privilege of wearing plain clothes indicates any want of appreciation of the honour of the uniform. It is spoken of as a privilege, though that is the word that really applies to the wearing of uniform. If not compulsory, the privilege becomes a real one, and the honour is increased. Were the permission given a trial in any particular unit, those men would feel that they were responsible to the rest of the Army for the result. Quite apart from the expense, the men of the Indian Army would dislike the restraint of uniform off duty were it imposed. A restraint is only salutary when necessary. I admit that the question of restraint is possibly, and that of necessity entirely, a matter of opinion. One or two regiments of the Indian Army have what may be called regimental plain clothes, to be obtained by the men from regimental stores. In all regiments appearance in plain clothes, dirty or unsuitable to their position is a crime. Incidentally, the permission to wear plain clothes by narrowing the distinction, at present so marked, between soldiers and civilians would help the cause of National Service.

I am, etc.,

COLONEL, Ind. Army.

28-4-05.

ARMY (MILITIA) REFORM.

To the Editor of the JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION.

SIR,—In the letter from me which you published in the May No. of the JOURNAL on Militia Reform, I am made to say that I sent a copy to the War Office. This is inaccurate, and was not so stated in the original manuscript.[1]

I shall be much obliged if you will make this correction in your next issue.

Your obedient servant,

JAMES D. LEGARD.

8, Ashburn Place, S.W.,
25th May, 1905.

[1] The inaccuracy complained of was due to a misapprehension in the reading of Colonel Legard's covering letter.—ED.

NAVAL AND MILITARY CALENDAR.

MAY, 1905.

2nd (T.) H.M.S. "Edgar" completed crew for service in Fourth Cruiser Squadron.

7th (S.) H.M.S. "Barfleur" arrived at Portsmouth with paid off crew of "Vengeance" from China.

, „ The Japanese Army under Marshal Oyama resumed its movement northwards in Manchuria.

13th (Sat.) Reported that a Japanese transport had been sunk by a mine off Port Arthur.

15th (M.) H.R.H. The Prince of Wales opened the new Headquarters of the 1st Cadet Battalion Royal Fusiliers.

16th (T.) King Alfonso XIII., King of Spain, was appointed a general in the British Army.

20th (Sat.) Launch of first-class battle-ship "Africa" from Chatham Yard.

„ „ Launch of first-class armoured cruiser "Cochrane" from the Fairfield Shipbuilding Co.'s Yard at Govan, on the Clyde.

21st (S.) Launch of the new first-class battle-ship "Erzherzog Ferdinand Max" from the Stabilimento Triestino Tecnico, Trieste, for Austro-Hungarian Navy.

24th (W.) H.M. the King witnessed manœuvres at Frensham and afterwards unveiled a Royal Army Medical Corps Memorial at Aldershot.

„ „ H.R H. the Prince of Wales unveiled a Memorial to the Colonial troops who fell in South Africa, at St. Paul's Cathedral.

25th (Th.) H.M. the King attended the opening of the Royal Naval and Military Tournament.

27th (Sat.) The Japanese occupied Sin-Min-Cheng, north of Chang-tu, Manchuria.

„ „ } Battle in the Straits of Korea off Tsushima Island between Japanese
28th (S.) } Fleet under Admiral Togo, and the Russian Fleet under Rear-Admiral Rojdestvensky, in which Russian Fleet was practically destroyed.

29th (M.) H.M.S. "Carnarvon" commissioned at Devonport for service in the Mediterranean.

FOREIGN PERIODICALS.

NAVAL.

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AUSTRIA-HUNGARY. — *Mittheilungen aus dem Gebiete des Seewesens.* No. 6. Pola: June, 1905.—"Observations on the Russo-Japanese War" (*continued*). "On the Use of Correction and Difference Curves in the Construction-plan of a Ship, and their Application to the Form of the Bottom." "The Complex Engines of the 'Saint-Georg' and 'Erzherzog Karl' Type." "Commander Peary's New Polar-ship 'Roosevelt.'" "The Italian Naval Estimates for 1905-06." "Foreign Naval Notes."

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Le Yacht. Paris: 6th May, 1905.—"The Grand Councils of the Navy." "Yachting Notes." "The Maritime Postal Service on the West Coast of Africa." "The Russian Fleet in the Pacific." 13th May.—"The English Heavy Gun Crisis." "The Bill relating to Engineer Officers." "Automobile Boats and their Practical Use." "The Maritime Postal Service on the West Coast of Africa" (*continued*). 20th May.—"Punishments in the Navy." "Yachting Notes." "Captain Mahan and the Naval Position in the Far East." 27th May.—"The Conning-tower in Ships of War." "Yachting Notes." "The Reorganisation of the Technical Section of the Ministry of Marine."

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Annaes du Club Militar Naval. Lisbon: January, 1905. — "The Russo-Japanese War: The Voyage of the Baltic Squadron." "Naval Architecture" (*continued*). "Fixed and Automobile Torpedoes." "Naval Notes."

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AUSTRIA-HUNGARY.—*Danzer's Armee Zeitung.*—Vienna: 4th May, 1905.—"The Association of Austro-Hungarian Officers and Military Officials." "The Reminiscences of an Infantry Regimental Commander." "Studies of Military History and Tactics." "Long Distance Riding

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Le Spectateur Militaire. Paris: 1st May, 1905. — "The Russo-Japanese War" (*continued*). "The Russo-Turkish Campaign of 1877-78" (*continued*). "The *Moral* of our Soldiers" (*continued*). "Days on the Lisaine: the 15th, 16th, and 17th January, 1871" (*continued*). "Military History and Organisation of Railways" (*continued*). 15th May. — "The *Moral* of our Soldiers" (*concluded*). "The Russo-Turkish Campaign of 1877-78" (*continued*). "The Russo-Japanese War" (*continued*). "Days on the Lisaine: the 15th, 16th, and 17th January, 1871" (*concluded*). "Military History and Organisation of Railways" (*continued*).

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NOTICES OF BOOKS.

My Service in the Indian Army — and After. By General Sir J. LUTHER VAUGHAN, K.C.B. London: Archibald Constable & Co.

That unique body of fighting men—the Punjaub Frontier Force—has lately ceased to exist, while the record of its five-and-fifty years of glorious life has yet to be written and given to the world; but every now and again some book is published which treats of the stormy life on the "Bloody Border" and of the leaders of men who made the Punjaub Frontier Force what it was and its regiments what they are. The roll of its great captains contains names which may still be conjured with from Peshawar to Mooltan—Neville Chamberlain, John Coke, Sam Browne, Lumsden, Wilde, Hodson, Daly, Sladen, Keyes, Brownlow, McQueen—and among these watch-dogs of the frontier there was no bettter soldier and no better regiment than Vaughan and the 5th Punjaub Infantry. In the book before us General Vaughan tells of his early life in a smart Hindustani regiment of the pre-Mutiny days; of the years spent among the wild men on the fringe of the Empire; of service during the Crimea in the Turkish Contingent; of all the hopes and disappointments of high command; and of the active life which still awaited him when the days of his soldiering were done. It is an interesting and a distinguished record, and we do not know which part of the narrative has appealed to us most—the purely military details of General Vaughan's regimental life, or the account of how—disappointed of further high command—he applied himself to a new profession, and one which brought him once more within touch of old comrades and of vanished scenes. From all this General Vaughan philosophically draws the inference, that the training which Indian service affords to its officers is productive of an all-round aptitude for various situations in life, and considers that this conviction may well afford encouragement to those who may still be enjoying this training. We fear that there will not be found many officers who will agree with the distinguished general, and in his own case it seems tolerably clear from his interesting book that for one civilian employment he was indebted to private influence, and for another to a certain literary facility, which is very apparent in this volume, but which was surely in no degree due to his military training, though doubtless fostered and exercised during his moments of military leisure. Officers in the author's position, who lack his good fortune and do not altogether share his determination and energy, will probably be of opinion that for the officer, as for the private soldier, military service is a bar to the obtaining of civil employment; and that for the majority of officers, who—like the commandant of the 5th Punjaub Infantry—are disappointed in their hopes of further employment, there remains but this—for themselves, the approval of their own consciences, and in regard to their old comrades, a happy memory of loyal help and generous appreciation.

PRINCIPAL ADDITIONS TO LIBRARY, MAY, 1905.

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The Other Side of the Lantern. By Sir F. TREVES. 8vo. 12s. (Cassell & Co., Ltd.) London, 1905.

The Metallurgy of Steel. By F. W. HARBORD. 2nd Edition, revised. 8vo. 25s. (Charles Griffen & Co., Ltd.) London, 1905.

The Italian Campaigns of General Bonaparte in 1796-7 and 1800. By GEORGE HOOPER. Crown 8vo. (Smith Elder & Co., Ltd.) London, 1859.

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Tactics Applied to Schemes. By Major J. SHERSTON, D.S.O., and Major L. J. SHADWELL. 2 Vols. 8vo. 15s. (Presented.) (Longmans, Green & Co.) London, 1905.

Verb. Sap. On Going to West Africa, Northern Nigeria, Southern, and to the Coasts. By A. FIELD. 8vo. 2s. 6d. (Presented.) (John Bale, Sons & Danielsson, Ltd.) London, 1905.

Maxims of War. By Lieutenant Hon. M. V. BRETT, M.V.O. Crown 8vo. (Presented.) (Hugh Rees, Ltd.) London, 1905.

Modern Guns and Gunnery. By Major H. A. BETHELL, R.A. 8vo. 10s. 6d. (Presented.) (F. J. Cattermole.) Woolwich, 1905.

Fighting Instructions, 1530-1816. Edited by J. S. CORBETT. Navy Records Society. 8vo. London, 1905.

Notes, Questions, and Answers on Military Law. By Major L. J. SHADWELL. 8vo (Presented.) Calcutta, 1904.

No. 85. The Counter-Attack. By Lieut.-Colonel L. E. KIGGELL, D.A.A.G., Staff College, Camberley. Aldershot Military Society, 1905.

Sac au Dos. Etudes Comparées de la Tenue de Campagne des Fantassins des Armées Française et Etrangères. By Commandant LAVISSE. 8vo. 9s. 6d. (Hachette et Cie.) Paris, 1902.

Rifle Brigade Chronicle for 1904. Compiled and Edited by Colonel WILLOUGBY VERNER. 8vo. (Presented.) (John Bale, Sons & Danielsson, Ltd.) London, 1905.

The Maintenance of Health in the Tropics. By W. J. SIMPSON, M.D. 8vo. 2s. 6d. (Presented.) (John Bale, Sons & Danielsson, Ltd.) London, 1905.

Décret du 3 Décembre, 1904, portant Règlement sur les Manœuvres de l'Infanterie. Ministère de la Guerre. 8vo. 1s. 6d. (Henry Charles Lavanzelle.) Paris, 1905.

Campagne de Monsieur le Maréchal Duc de Villeroy et de Monsieur le Marquis de Bedmar en Flandres, L'An 1704. 8vo. (Presented.) (Marc, Michel Rey.) Amsterdam, 1762.

Aus Meinem Leben. By PRINZ KRAFT ZU HOHENLOHE-INGELFINGEN. 8vo. 2 Vols. (Ernst Siegfried Mittler & Sohn.) Berlin, 1897 and 1905.

In Peace and War. By Sir JOHN FURLEY. 8vo. 10s. 6d. (Smith, Elder & Co.) London, 1905.

The Science of War—A Collection of Essays and Lectures, 1892-1903. By Colonel G. F. R. HENDERSON. Edited by Captain N. MALCOLM, D.S.O. 8vo. 14s. (Longmans, Green & Co.) London, 1905.

The World's Navies in the Boxer Rebellion (China, 1900). By Lieutenant C. C. DIX, R.N. 8vo. 7s. 6d. (Digby, Long & Co.) London, 1905.

With Russian, Japanese, and Chunchuse. By E. BRINDLE. 8vo. 6s. (John Murray.) London, 1905.

Etudes sur les Armées du Directoire. By P. MAHON. Part I. 8vo. (R. Chapelot et Cie.) Paris, 1905.

Histoire de la Campagne de 1794 en Italie. By G. FABRY. Vol. I., Parts I. and II. 8vo. 35s. (R. Chapelot et Cie.) Paris, 1905.

Minutes of Proceedings of the Institution of Civil Engineers. Vol. CLIX. 8vo. (Presented.) London, 1905.

Empire of the East, or Japan and Russia at War, 1904-5. By BENNET BURLEIGH. (Chapman & Hall, Ltd.) London, 1905.

The Year of Trafalgar. By HENRY NEWBOLT. 8vo. 5s. (John Murray.) London, 1905.

The Journal
OF THE
Royal United Service Institution.
VOL. XLVIII. 1904-1905.
APPENDIX.

THE SEVENTY-FOURTH ANNIVERSARY MEETING

MARCH 7th, 1905.

Royal United Service Institution.

THE 74TH ANNIVERSARY MEETING WAS HELD AT THE INSTITUTION ON TUESDAY, MARCH 7TH, 1905, ADMIRAL SIR NATHANIEL BOWDEN-SMITH, K.C.B., IN THE CHAIR.

The CHAIRMAN:—Gentlemen, this is the Annual Meeting, and the Report is before you. Do you wish it to be read, or do you take it as read?

The SECRETARY read the notice convening the meeting.

The 74th Annual Report, as follows, was taken as read:—

"The Council have the honour to submit their Report for the year 1904.

PRESIDENT.

The death of Field-Marshal His Royal Highness the Duke of Cambridge deprived the Institution of its distinguished President. Field-Marshal His Royal Highness the Duke of Connaught has graciously accepted the Office.

COUNCIL.

The Council regret to report the deaths of Admiral Henry Boys and Admiral Sir Erasmus Ommanney, K.C.B., both of whom had been Members of the Council for many years and were Vice-Presidents at the time of their deaths.

MEMBERS.

The number of officers who joined the Institution during the year was 210, of whom 33 became Life and 177 Annual Members. This is an increase of 10 on the previous year. The total number of Members at the end of the year was 5,313, which is a decrease on the previous year of 48. The number of deaths recorded was 117, compared with 120 during the previous year. The Council much regret to report that during the year 110 officers withdrew from Membership; this number, although less than that of last year, they consider unsatisfactory.

Finance.

It will be seen by the accompanying statement of accounts that the year's working has resulted in a debit balance of £119 18s. 2d.; this is mainly accounted for by the heavy expenditure necessitated by various repairs to the buildings. The Reserve Fund amounts approximately to £15,459, which was the amount in the Report of 1904.

Museum.

The total receipts for the Museum amounted to £506 19s. 6d., a satisfactory increase on the takings for 1903. During the year many of the exhibits have been described and numbered for inclusion in the new catalogue, which is in course of preparation, and which it is hoped will be completed during the present year. A considerable number of the cases of Relics has been re-arranged, and a classification of the Arms has been commenced.

Special Nelson Exhibition, 1905.

From May 1st to November 1st an Exhibition of Nelson Relics will be held in the Museum for the purpose of celebrating the Centenary of the Battle of Trafalgar. The Lords Commissioners of the Admiralty have kindly consented to transfer the Nelson Relics at Greenwich for this period. In order to make the Exhibition as complete as possible, it is hoped that all who possess Relics will kindly lend them for this special occasion.

Library.

The number of Members subscribing to the Lending Library has increased from 116 to 160, which may be considered satisfactory. It is most desirable that Subscribers to the Lending Library should remember that in no case may a work issued to them be used by a Non-Subscriber.

Donations of books and maps have been received from the Governments of Austria, Belgium, Denmark, France, Germany, Italy, the Netherlands, Russia, Spain, Sweden, Switzerland, and the United States. The thanks of the Council have been conveyed to the several Governments for these donations.

The Institution is indebted to the Lords Commissioners of the Admiralty, to the Army Council, the Secretaries of State for the Colonies, and for India, and to the Civil Service Commissioners, for copies of various works issued by their respective Departments, and to the Speaker of the House of Commons for Parliamentary papers.

The exchange of Journals with Foreign Governments, and with many Scientific Societies in this and other countries, has been continued.

The Journal.

The Journal has fully maintained its high position as a Service periodical. It is satisfactory to record that, although the amount of printed matter has not been reduced, an appreciable economy has been effected in the cost of production.

Papers on the following subjects were read and discussed, and the majority have appeared in the Journal. To the authors are due the best thanks of the Institution.

The Right Hon. Sir Charles W. Dilke, Bart., M.P., "The Report of the War Commission."

Major W. H. Ames, 2nd V.B. Oxfordshire L.I., "The Military Education of Officers of the Auxiliary Forces."

Colonel E. W. Cotter, R.E., "Coast Defence from an Imperial Standpoint."

T. Miller Maguire, Esq., M.A., LL.D., Inner Temple, Barrister-at-Law:—
"The 'New Pacific' from a Strategic Point of View."
"The Strategic Features of the Operations in Manchuria, as Illustrated by European and American Campaigns."

Admiral the Right Hon. Sir J. C. Dalrymple Hay, Bart., G.C.B., D.C.L., F.R.S., "On the Necessity for Training Seamen for the Sea Service."

Major-General Sir Edwin Collen, G.C.I.E., C.B., p.s.c., "The Administration and Organisation of the Army in India."

Rev. T. J. Lawrence, M.A., LL.D., Lecturer on International Law at the Royal Naval College, Greenwich, "Problems of Neutrality Connected with the Russo-Japanese War."

Lieutenant Carlyon Bellairs, R.N. (Retired), "The Standard of Strength for Imperial Defence."

Lieut.-Colonel E. Rogers, "Machine Guns Up-to-date."

Lieutenant-Commander K. Sato, Imperial Japanese Navy, "The Education of Imperial Japanese Naval Officers of the Executive Branch."

Brevet-Major C. E. I. McNalty, Army Service Corps, "Mechanically Propelled Vehicles for Military Purposes."

Alan H. Burgoyne, Esq., "The Future of the Submarine Boat."

Charles S. Jerram, Esq., "Short Service and the Naval Reserve."

Commander W. C. Crutchley, R.N.R., "Protection of Commerce in War, with Special Reference to the Cape Route."

Lieut.-Colonel J. A. Nunn, C.I.E., D.S.O., Deputy Director-General A.V.D., "The Sick Horse in Peace and War."

Lieut.-Colonel C. B. Mayne, R.E., "The Lance as a Cavalry Weapon."

Major J. Moore, A.V.D., "Horses of Different Countries and Supply, with Relation to Military Services."

2nd Lieutenant J. Rogan, Bandmaster, Coldstream Guards, "Military Bands and Music."

W. Kirton, Esq., late Special Correspondent for the "Central News" and the "Graphic," "With the Japanese at the Passage of the Yalu."

The thanks of the Institution are also due to the following officers for Occasional Papers and Translations from Foreign Journals contributed by them: *Occasional Papers* by Surgeon-Major W. C. Beevor, C.M.G., Scots Guards; Colonel C. E. de la Poer Beresford, *p.s.c.*, late Military Attaché, H.M. Embassy, St. Petersburg; Sir George Sydenham Clarke, K.C.M.G., R.E., F.R.S., Governor of the State of Victoria; Major J. L. J. Clarke, East Yorkshire Regiment, D.A.A.G., IIIrd Army Corps, Director of Artillery; Captain J. W. E. Donaldson, R.F.A.; Major C. O. Head, R.F.A.; Captain E. M. J. Molyneux, D.S.O., 12th Cavalry (Indian Army); Commander J. F. Ruthven, of the Orient Steam Navigation Company's s.s. "Orontes"; Captain R. M. G. Tulloch, 2nd Royal West Kent Regiment; Lieutenant H. G. de Watteville, R.G.A.; and one anonymous contributor. *Translations from Foreign Works* by F. S. Arnold, B.A., M.B. (Oxon.); Lieut.-Colonel W. E. Gowan, Retired, Indian Army; Lieut.-Colonel E. Gunter, *p.s.c.*, (late) East Lancashire Regiment; and five anonymous contributors.

'Royal United Service Institution Gold Medal, and Trench Gascoigne Prizes.'

Subject—'The best method for carrying out the conjoint practice of the Navy and Army in Embarkation and Disembarkation for War, illustrated by the experience of the past.'

Admiral Sir Cyprian A. G. Bridge, G.C.B., Colonel J. F. Daniell, R.M.L.I., Intelligence Department, Admiralty, and Lieut.-Colonel R. C. B. Haking, D.A.A.G., Staff College, have kindly undertaken the duties of referees.

Their decision will be made known at the meeting.

Reception.

The Council have decided to hold a Reception in the Museum in June. A Special Committee to arrange the details has been appointed.

Members of Council.

The following members retire, having served three years on the Council:—

Naval.

Admiral Sir Cyprian A. G. Bridge, G.C.B.
Admiral Sir N. Bowden-Smith, K.C.B.
Rear-Admiral H.S.H. Prince Louis of Battenberg, G.C.B., G.C.V.O., A.D.C. (proceeding on foreign service).
Captain G. A. Ballard, R.N.

Military (Regular Army).

General Lord METHUEN, G.C.B., K.C.V.O., C.M.G.
Major-General Sir GEORGE MARSHALL, K.C.B.
Major-General Lord CHEYLESMORE.
Major W. ANSTRUTHER-GREY.

(Militia.)

Colonel F. C. ROMER, C.M.G.

(Volunteers.)

Colonel S. G. BIRD, C.B.

The following are the names of the candidates nominated for the vacancies on the Council:—

Naval (4 Vacancies).

Admiral Sir Robert H. Harris, K.C.B., K.C.M.G. (President of the Royal Naval College, Greenwich).
Vice-Admiral William F. S. Mann (retired).
Captain Arthur M. Field, R.N., Hydrographer of the Navy.
Captain Charles L. Ottley, M.V.O., R.N., Director of Naval Intelligence.
Captain Edmond J. W. Slade, M.V.O., R.N., Captain of the Royal Naval College, Greenwich.
Captain George A. Ballard, R.N., Assistant Director of Naval Intelligence (for re-election).

Military (Regular Army) (4 Vacancies).

Field-Marshal Earl Roberts, V.C., K.G., etc.
General Lord William Seymour, K.C.V.O.
General E. H. Clive (retired).
Major-General Sir George Marshall, K.C.B. (retired), (for re-election).
Major-General R. S. S. Baden-Powell, C.B., Inspector of Cavalry.
Colonel Sir H. S. Rawlinson, Bart., C.B., Commandant, Staff College.

Military (Militia) (1 Vacancy).

Colonel the Duke of Bedford, K.G., Commanding 3rd Batt. the Bedfordshire Regiment.

Military (Volunteers) (1 Vacancy).

Lieut.-Colonel C. E. H. Hobhouse, M.P., Commanding 3rd V.B. the Gloucestershire Regiment.

A. LEETHAM,
LIEUT.-COLONEL, *Secretary.*

WHITEHALL,
Feb. 7, 1905."

DR. **REVENUE ACCOUNT FOR THE YEAR ENDING 31ST DECEMBER, 1904.** CR.

1903. £		*1904.* £ s. d.	£ s. d.
3,467	To Members' Subscriptions	3,452 1 0	
276	,, Extra Subscriptions	231 14 6	
			3,683 15 6
178	,, Entrance Fees	183 15 0	
409	,, Life Subscriptions	448 10 0	
			632 5 0
429	,, Dividends and Interest	453 18 10	
600	,, Government Grant	600 0 0	
			1,053 18 10
201	,, Sale of Journal	192 19 4	
268	,, Advertisements in Journal	291 12 6	
9	,, Honorary Members who pay for Journal ...	3 1 6	
			487 13 4
62	,, Lending Library	85 10 6	
1	,, Sale of Library Catalogue	1 2 6	
			86 13 0
186	,, Rent of Lecture Theatre	185 3 0	
482	,, Admissions to Museum	506 19 6	
13	,, Sale of Pamphlets and other Museum Receipts	40 6 5	
			732 8 11
—	,, Miscellaneous Receipts	0 18 9	
16	,, Seats to view Procession to Parliament ...	29 17 7	
			30 16 4
			6,707 10 11
160	Balance carried to Balance Sheet	119 18 2	
£6,757		£6,827 9 1	

1903. £		*1904.* £ s. d.	£ s. d.
400	By Secretary's Salary	357 18 8	
300	,, Editor and Librarian's Salary (with Gratuity)	362 10 0	
150	,, Assistant Editor and Librarian's Salary ...	150 0 0	
120	,, Assistant Secretary's Salary	130 0 0	
104	,, Assistant Curator's Salary	106 0 0	
74	,, Library Clerk's Salary	75 10 6	
			1,181 19 2
45	,, Pensions		25 0 0
541	,, Servants' Wages	558 1 0	
75	,, Servants' Clothing	74 1 6	
			632 2 6
544	,, Ground Rent	553 8 4	
47	,, Water	47 5 0	
605	,, Rates	568 15 0	
188	,, Taxes	158 19 2	
			1,328 7 6
43	,, Fire Insurance	43 0 0	
6	,, Boiler ,, ...	6 8 0	
19	,, General ,, ...	22 11 11	
			71 19 11
55	,, Fuel	77 13 9	
125	,, Lighting	100 13 9	
			178 7 6
60	,, Repairs to Building	92 8 2	
7	,, Telephone	6 6 11	
167	,, House Expenses and Sundries	190 7 7	
30	,, Depreciation of Furniture	30 0 0	
			319 2 8
19	,, Museum Sundries	57 12 2	
1,664	,, Journal Printing	1,550 16 6	
67	,, Shorthand Notes	125 4 10	
90	,, Literary Services	90 0 0	
10	,, Slips and Short Copies of Lectures... ...	13 17 3	
485	,, Postage of Journals	506 15 4	
			2,344 6 1
299	,, Library	301 9 1	
23	,, Lecture Expenses	16 15 6	
58	,, Advertising Lectures	61 10 3	
			379 14 10
26	,, Audit and Accountancy	26 5 0	
44	,, Postage of Letters, Stamps, etc.	59 6 11	
256	,, Printing and Stationery	269 7 0	
11	,, Gold Medal	11 10 0	
			366 8 11
£6,757		£6,827 9 1	

25th January, 1905.

We hereby certify the above Account to be correct,

WILDE AND FERGUSON DAVIE, Chartered Accountants,
ALLAN H. DRUMMOND,
FOLLETT PENNELL, late Deputy Accountant-General of the Navy,
} Auditors.

25th January, 1905.

ALLAN H. DRUMMOND,
FOLLETT PENNELL, late Deputy Accountant-General of the Navy, } Auditors.

DR. **BALANCE SHEET, 31ST DECEMBER, 1904.** CR.

1903. £		*1904.* £ s. d.
38,874	To Balance, 31st December, 1903	38,713 14 1
£38,874		£38,713 14 1
38,714	To Balance	£38,531 19 11
1,016	,, Sundry Creditors	944 5 0
529	,, Reserve for Painting, Repairs, &c.	433 4 0
25	,, Subscriptions paid in advance	27 9 0
£40,284		£39,936 17 11

1903. £		*1904.* £ s. d.	£ s. d.
160	By Balance from Revenue Account ...		119 18 2
—	,, Refunds in respect of Nelson Statuette		61 16 0
38,714	,, Balance		38,531 19 11
£38,874			£38,713 14 1
23,102	By Outlay on New Building		£23,101 16 8
370	,, Furniture	370 0 0	
—	,, less Depreciation	30 0 0	
			340 0 0
	,, Investments for Reserve Fund—		
964	,, £1,000 0s. 0d. Ceylon 3 p.c. (at cost) ...	967 11 0	
450	,, £437 18s. 2d. Canada 3 p.c. (at cost) ...	450 0 0	
1,200	,, £1,230 13s. 7d. Consols 2½ p.c. (valued and at cost)	1,200 0 0	
2,656	,, £2,421 18s. 8d. India 3½ p.c. (at cost) ...	2,656 6 9	
2,984	,, £3,044 17s. 11d. India 3 p.c. (at cost) ...	2,984 0 0	
3,076	,, £3,076 5s. 4d. Nottingham Corporation 3 p.c. (at cost)	3,076 5 3	
1,300	,, £1,181 10s. Oxford Corporation 3 p.c. (at cost)	1,300 0 0	
2,325	,, £5,000 Hull and Barnsley Railway Ordinary Stock, valued 31st December, 1897 (Trench Gascoigne Gift)...	2,325 0 0	
500	,, £473 17s. 9d. Canada 3½ p.c. (Hoskier Bequest) (at cost)	500 0 0	
			15,459 3 0
393	,, Sundry Debtors		359 12 8
—	,, Balance at Bank—		
241	Current Account...	148 7 1	
700	Deposit Account...	500 0 0	
19	,, Cash in hand	27 18 6	
			676 5 7
£40,284			£39,936 17 11

We hereby certify that the above Account is correct ; we have verified the Cash Balances and Investments,

25th January, 1905.

WILDE AND FERGUSON DAVIE, Chartered Accountants,
ALLAN H. DRUMMOND,
FOLLETT PENNELL, late Deputy Accountant-General of the Navy, } Auditors.

CHESNEY MEMORIAL MEDAL FUND.

DR. 31ST DECEMBER, 1904. CR.

1904.		£ s. d.	*1904.*		£ s. d.
Jan. 1.	To Balance, 31st December, 1903	36 1 6	Dec. 31.	By Balance in favour of Fund	43 14 8
June 15.	,, 6 mths. Div. £230, Bengal & North-Western Ry. Pref. Stock	3 16 8			
Dec. 5.	,, ,, ,, ,, ,, ,, ,,	3 16 6			
		£43 14 8			£43 14 8

We hereby certify the above Account to be correct,

25th January, 1905.

WILDE AND FERGUSON DAVIE, Chartered Accountants,
ALLAN H. DRUMMOND,
FOLLETT PENNELL, late Deputy Accountant-General of the Navy,
} Auditors.

TRENCH GASCOIGNE PRIZE FUND.

DR. 31ST DECEMBER, 1904. CR.

1904.		£ s. d.	*1904.*		£ s. d.
Jan. 1.	To Balance, 31st December, 1903	44 19 11	Mar. 16.	By 1st Prize Essay, 1903	31 10 0
May 16.	,, 6 mths. Div., £1,862 19s., North Brit. Ry. Deb. Stock	26 12 10	Apr. 6.	,, 2nd ,, ,, ,, ...	31 10 0
Nov. 11.	,, ,, ,, ,, ,,	26 11 0	Dec. 31.	,, Balance in favour of Fund	35 3
		£98 3 9			£98 3 9

We hereby certify the above Account to be correct,

25th January, 1905.

WILDE AND FERGUSON DAVIE, Chartered Accountants,
ALLAN H. DRUMMOND,
FOLLETT PENNELL, late Deputy Accountant-General of the Navy,
} Auditors.

Number of Members.

	Life.	Annual.	Total.
Members on 1st January, 1904	1943	3418	5361
,, joined during 1904	33	177	210
	1976	3595	5571
Deduct—Deaths during 1904 ..	41	76	
Withdrawals		110	41 217 258
Struck off		31	
	41	217	
Number on 1st January, 1905	1935	3378	5313

Tabular Analysis of the State of the Institution.

[A full analysis for each year from 1831 will be found in the Report for 1897.]

Year. 1st Jan. to 31st Dec.	Annual Subs. received.	Entrance Fees.	Receipts (from all sources).	Life Subs. received.	Amount of Stock.	Invested in the purchase of Books, &c.	No. of Vols. in Library.	No. of Members on the 31st Dec.
	£	£	£	£	£	£		
1831	654	..	654	1,194	..	..	..	1,437
1841	1,450	..	1,643	186	6,000	243	5,850	4,243
1851	1,136	131	1,292	66	666	34	10,150	3,188
1861	2,122	305	2,899	266	2,846	99	11,812	3,689
1871	2,455	237	3,677	538	7,748	202	15,501	3,922
1881	2,893	238	4,967	645	13,670	240	19,920	4,577
1891	2,640	189	5,004	454	21,942	153	23,845	4,204
1892	2,930	605	9,429	1,572	24,805	142	24,099	4,657
1893	2,929	468	8,334	1,095	22,172	157	24,471	4,961
1894	3,598	215	6,625	606	12,840	200	24,680	5,016
1895	3,760	353	7,117	921	8,761	204	25,947	5,198
1896	3,802	351	7,225	876	8,761	245	26,161	5,347
1897	3,910	401	10,902†	959	12,386	381	26,381	5,550
1898	3,964	265	6,935	493	12,386	376	26,592	5,620
1899	3,834	167	6,646	251	12,841	430	27,142	5,583
1900	3,879	174	7,170*	235	13,791	264	27,492	5,491
1901	3,816	197	6,955	358	14,192	289	27,792	5,443
1902	3,806	188	7,063	449	14,491	309	28,167	5,427
1903	3,743	178	6,597	409	15,459	299	28,387	5,361
1904	3,684	184	6,707	448	15,459	301	28,636	5,313

† A donation of stock valued at £2,323, and £1,301 realised by the letting of seats to view Her Majesty's Diamond Jubilee Procession, are included in this amount.

* This amount includes a donation of £500.

The CHAIRMAN:—Gentlemen, in moving the adoption of the Report, I think it would be unbecoming on my part if I did not refer in a very few words to the loss the Institution has sustained since our last meeting by the death of our President, H.R.H. the Duke of Cambridge, who for many years took a very great interest in the Institution. He became a member of the Institution so long ago as 1852, and had been our President since 1872. In the neat speeches he made here and elsewhere he always said the right thing in the right way. I am sure that the members of the Institution will be glad to hear that the Duke of Connaught has consented to take his place as President of the Institution. As you know, he is abroad at present, but I very much hope that next year we shall have him in the Chair. We have also to deplore the loss of two other very old members of the Institution, Admiral Sir Erasmus Ommanney, K.C.B., and Admiral Henry Boys; they were both Vice-Presidents, and Sir Erasmus Ommanney was a member of the Institution since 1841, and I believe was the oldest member. I think that the thanks of the meeting are due to Prince Louis of Battenberg, for having acted as Chairman of the Council during the past year. It is not usual to have an officer holding his position at the Admiralty acting as our Chairman, and I think we owe him our thanks for having taken that duty. He has been called away to take command of the 2nd Cruiser Squadron, or I feel sure he would have been here to-day. In moving the adoption of the Report, I would call your attention to the fact that our financial position is not quite what it ought to be. In the current expenditure and receipts for the last year you will notice we were £120 to the bad, and in the year before we were £160 to the bad. We must make efforts to get more members or we shall have to try and reduce our expenses. It would be indeed a great feather in the cap of the Secretary, who has been with us a year now, if he could see his way to work the Institution a little more economically. There are two matters I should just like to say a few words about. The first is, that this being the centenary of the death of Nelson, we are going to hold an exhibition of Nelson relics in the Museum, and the Admiralty have very kindly promised to let us have the relics at Greenwich, those that are left, and I believe they have been nearly all restored. We hope it will be of interest to the public, and also bring in something towards our exchequer. It is also proposed this coming year to hold a conversazione or evening party some day in June, probably about the 8th, somewhat on the scale of that of the Geographical Society and Colonial Institute. I venture to hope that members will do their best to make it a success by taking tickets and attending with their friends. We hope the Duke of Connaught will be here, but we cannot tell at present. I also think our thanks are due to our excellent Secretary and to

Captain Garbett, the Librarian, and the members of the staff for the way they have carried out their duties during the year. I now beg to move the adoption of the Report.

Colonel LONSDALE HALE:—I have undertaken to second the Report, and in doing so I undertake what in theatrical parlance is called the part of an under-study. The actor to whom this part was assigned was Major-General Sir George Marshall. Sir George Marshall, I am sorry to say, is not able to be here. That I regret very much, because he was a representative of a certain stratum of the Council which is most valuable. Sir George, first of all, represented the Artillery; he is the only Artillery officer on the Council; next, he belonged to that class of officers who have only lately left the Service, and therefore bring into the Council the views that are held by the Service generally with regard to the Institution. There is another stratum which was deposited on the Council a great many years ago, which is supposed to be fossiliferous, and to which I myself belong, and therefore it is very desirable to have a sound stratum on top of us, and Sir George Marshall was a very active member of the Council. I am thrown in close connection with my friend in the Chair, who has decided to retire from the Council this year. Having been a colleague with him and seen the great work which he has done for so very many years in the Institution, I part company with him on this occasion with great regret, and am only too glad to find myself associated with him in bringing forward this motion. The Chairman has referred to the decrease of members. We have lost 48 members this year, but I do not mind that loss a bit. I have been through the list of members who have withdrawn, and I cannot deduce from it any reason why they should have withdrawn. They are of all ranks and of all classes. I look forward to a very great future for the Institution, and mainly in connection with the JOURNAL. You must remember, gentlemen, that the JOURNAL is the Institution. Half of our funds are spent on the JOURNAL, and the JOURNAL is the only return we can make to about 4,500 members who never come near this place. The requirements of those members are very often forgotten. It is only at the outside about 500 people who ever come here out of our 5,000 members, and therefore we are doing everything we can to maintain our connection with the 4,500 who contribute to the Institution without getting much return. What is one man's loss is another man's gain. Nobody regrets more than I do that the "Army Journal" fell through. I had looked forward to the "Army Journal" as a most valuable journal, and the only periodical that we need fear. I deeply regret that it did fall through; but it is to our gain. First of all, we have no real competitor against us; and secondly, we have been able to establish a connection with the War Office with respect to the publication of certain matter. Years ago, when I was honorary editor of a portion of the JOURNAL, I communi-

cated with an officer then at the head of the Intelligence Department, and he told me there was certain material in the War Office archives which they could not publish for want of money, but which they wished to publish. I was allowed to bring them to the Institution and put them in the JOURNAL. That was rather intermittent for a time. Then when Sir John Ardagh went to the head of the Department, my friend Captain Garbett got into communication with him, and we very frequently published for the War Office, minutes, translations, and other things they could not afford to publish themselves. Therefore, when I found that the "Army Journal" had been definitely abandoned, I moved the Council that we should put ourselves again in communication with the War Office. I know there is a vast amount of material in the War Office which they would like to publish, but which they cannot afford to do. They have accepted our suggestion, and that will be a great benefit to the Institution. We receive £300 a year from the War Office, and we, as a publishing department, to a great extent can make some return to them for that £300, and we establish our position accordingly. I have no doubt that our JOURNAL, with this War Office matter, in addition to what we already publish, will gradually grow up more valuable than it is now. If the Government were to give these things to any other professional periodical, what would it mean? It would mean an increase of money to the proprietor because it would mean an increase of circulation, whereas with us, any amount of copy we get from the War Office will not result in anybody being one penny the better off. We propose to act as a channel of publication between the War Office and the Service, as far as they afford us copy for the purpose. Then we want to extend our connection with our foreign members. Many military members, I dare say, have received from time to time questions with regard to books from officers abroad. It is extremely difficult for an officer abroad to find somebody to select books for him and send them out to him. Perhaps he is thrown on some publisher, and writes to him, and then there is the question about paying. We have determined to act as literary vendors to the members of the Institution. A member has merely to write to us and say he wants books or maps sent, and we will buy them, pack them up, and send them to him. If he wants to know what books to buy, we will give him advice as to what is suitable for his purpose and send the books to him. We shall not suffer any loss from it. Payment may be deferred, but the line on which the Council goes is to believe that the word of an officer and a gentleman who is a member of the Institution is as good as his bond, and that some time or other we shall get the money, and there will be no bad debts. Then we are starting an experiment. We have been constantly asked questions with regard to various points in the past: the history of regiments, and so forth; in fact, it became necessary at one time to impose a payment

on anybody who came to ask a question, because those queries took up such a lot of the time of the staff. We are going to open a "Notes and Queries Section" in the JOURNAL, so that anybody who wants information about the past or about the present can write to us, and the answer will be published in the JOURNAL. I hope the younger bloods in the Army will not "pull our legs," and put such queries to us as to whether the tiger or the lady came out of the door, or anything of that kind. I hope, indeed, that the experiment will be a success. There is one other point the Chairman thinks it well to bring before your notice, a point upon which a great deal of misunderstanding exists. It has regard to our lending library. For very many years for the sum of 10s., an officer who is a member of the Institution receives from this library four volumes at a time. There was never such a cheap library in the whole world as ours; a member merely has to send his 10s., and he can draw four volumes at a time from our library for a period of twelve months; but of course he must be a member of the Institution. The library pays its own expenses very fairly; but as each officer using the library is a member of the Institution, the Institution gets his guinea for its general funds. There has been lately a movement started in the Army, owing to the increase in the reading of the officers, for the extension of our lending library, and at our Journal Committee this morning we had before us a proposition. I am particularly anxious to bring it to your notice, because we shall be only too glad if we can receive any views from you on the subject, as it is a most difficult matter to deal with. The first application came from the Tactical Society of Dublin. They said:—"You send a box of books for £5 a year to Aldershot; let us join your lending library on the same terms." The second was from an officer commanding a district in Ireland, and he said:—"I have to deal with many things, schemes, and so forth, and I want books. Let me from my district send you a fee, and let this district, as a unit, join your library." The third was from a commanding officer, who said:—"I want a library of books at my depôt centre; let us, as a depôt centre, join you, pay you £5 or whatever you like, and you supply us with certain boxes of books." The last came from a regimental unit, a battalion, and the commanding officer wrote:—"Will you let our battalion have the books, and we will send you £5 a year, and you can send us twelve books so many times a year." That is all very nice, and no doubt it would be a very good thing if we could meet all these demands; but I want you to understand how prejudicially it may affect the Institution. People say the United Service Institution should cater for the good of the Service. I will take what I might call the unit with which I am intimately associated at the present time, especially with regard to its library, and that is the Staff College. You have at the library eighty officers, excluding the staff, and they have to do a good deal

of reading. Out of those eighty officers some thirty belong to the Institution—probably a great deal more, but thirty of those officers pay 10s. each a year to use this library. We get their 10s., and we get their subscriptions; but if we apply to the unit of the Staff College this proposed extension of the lending library, and the Staff College give to us £10 a year for the supply of books, why should an officer of the Staff College belong to the Institution at all? The moment you start a supply to the units you cease to secure membership of the Institution. I should be very glad indeed if somebody will give us their views on the subject. The lending library was started for the benefit of the Institution, and we have had many people join and pay their entrance fee and their annual subscription in order that they might have a chance of paying the extra 10s. and getting books. If we are going to extend that privilege to units I very much fear it will be a great incentive to a large number of officers to drop off the Institution. Those are the only two subjects which, with the Chairman's permission, I desire to bring before the meeting; and I now simply second the adoption of the Report.

No discussion being forthcoming, the motion for the adoption of the Report was put and carried unanimously.

Colonel C. G. DONALD, C.B.:—I have been asked to propose:—"That the thanks of this meeting be given to the auditors, Follett Pennell, Esq., Allan Drummond, Esq., and Messrs Wilde and Ferguson Davie, Chartered Accountants," and I have much pleasure in making the proposition.

Commander W. F. CABORNE, C.B., R.N.R.:—It affords me very great pleasure to second the resolution.

The resolution was carried unanimously.

The CHAIRMAN:—The next resolution is one that I have to propose, *i.e.*, "That Paragraph 5, Chapter 6, of the Bye-Laws, which reads:—

> 'There shall be three Auditors, not members of the Council, of whom one shall be a Chartered Accountant. They shall be elected at each Annual General Meeting, and the out-going Auditors are eligible for re-election. They shall examine and sign the yearly accounts, adding any remarks and making any enquiries as they deem proper,'

be substituted by the following:—

> 'The accounts shall be audited by a firm of Chartered Accountants, nominated at the Anniversary Meeting; they will carry out a continuous audit, reporting quarterly to the Council; they will examine and sign the yearly accounts, adding any remarks and making such enquiries as they may deem proper.' "

We think this is a very good time to change the rule, because one of our honorary auditors, Mr. Follett Pennell, is retiring, and another of the honorary auditors, Mr. Allan Drummond, is the banker, and of course we ought to audit him; he has no business to audit us; so that we propose to abolish the honorary auditors, who are unnecessary, and to establish a regular system of auditing by a firm of Chartered Accountants. We shall have a running audit, the accounts being audited every year.

Admiral the Hon. Sir E. R. FREMANTLE, G.C.B., C.M.G.:—What do we pay them?

The CHAIRMAN:—Twenty-five guineas. We are paying the same now, and so it is no increase of payment.

Colonel W. A. HILL, C.B.:—I have much pleasure in seconding the motion.

Sir GEORGE HAYTER CHUBB:—Might I suggest a very slight alteration of the wording, which I think will improve it? In the third line of the new bye-law, instead of saying "they will," say "who shall," making the semi-colon a comma; and instead of "they will" in the fourth line, simply put in the word "and," also making the semi-colon a comma.

The CHAIRMAN:—That is a slight alteration which appears to me to make it much better. It now reads:—

> "The accounts shall be audited by a firm of Chartered Accountants, nominated at the Anniversary Meeting, who shall carry out a continuous audit, reporting quarterly to the Council, and examine and sign the yearly accounts, adding any remarks and making such enquiries as they may deem proper."

The resolution was carried unanimously.

Lieut.-Colonel R. ELLIOTT-COOPER:—I have much pleasure in proposing the next resolution, to the effect "That the firm of Messrs. Wilde & Ferguson Davie, Chartered Accountants, be appointed Auditors for the ensuing year."

Lieutenant G. R. MALTBY, M.V.O., R.N., seconded the motion.

General Sir JOHN FRYER:—It is usual to put in the fee.

The CHAIRMAN:—That is twenty-five guineas, the same as we pay now.

Lieutenant MALTBY:—We have had chartered accountants for years.

The CHAIRMAN:—We are not altering the fee. We are now re-appointing the chartered accountants, which is done annually.

The resolution was unanimously carried.

The CHAIRMAN:—The Secretary will now read the Report of Referees on the 1904 Joint Naval and Military Essay.

The SECRETARY read the Report.

The CHAIRMAN:—Were there only five altogether?

The SECRETARY:—Yes, that is all.

The SECRETARY then opened the sealed envelopes, and announced that the name of the winner of the first prize was Lieut.-Colonel C. E. D. Telfer-Smollett, Reserve of Officers, 3rd Battalion South Staffordshire Regiment; and the second prize winner, Major G. F. MacMunn, D.S.O., *p.s.c.*, Royal Field Artillery.

The CHAIRMAN:—As neither of these two officers is able to be present, one being in India, they will be written to, and we shall congratulate them on their success. The proper remuneration will be sent to them, and the medal.

General Lord WILLIAM SEYMOUR, K.C.V.O.: I have very peculiar pleasure on this occasion in proposing the following resolution:—

"That a vote of thanks be given to the Referees, viz.:—

Admiral Sir Cyprian A. G. Bridge, G.C.B.
Colonel J. F. Daniell, R.M.L.I., Naval Intelligence Department, Admiralty, and
Lieut.-Colonel R. C. B. Haking, D.A.A.G., Staff College,

for their valuable services in adjudicating on the Essays." I think the Council may be congratulated on having obtained the services of these three officers for the purpose to which they have been

allotted. Sir Cyprian Bridge was an old shipmate of mine of over fifty years' standing, and from his unique experience he was quite the right man in the right place to adjudicate on this important question. It is the first time, I believe, that a joint Navy and Army Essay has been suggested, and it is peculiarly adapted to the present year, when we see what is going on at the present moment in the Eastern Seas and in Manchuria. Without a joint operation between the two Services the Japanese would have never attained the great success they have attained up to the present moment.

Captain G. A. BALLARD, R.N.:—In Captain Bacon's absence I have great pleasure in seconding the resolution.

The resolution was unanimously carried.

The CHAIRMAN:—I may take this opportunity of saying that a gentleman called here a few weeks ago and offered an additional prize this year for an extra Essay. He did not wish his name published. He felt so anxious about the condition of our land forces generally that he wished, as a soldier, to offer this prize for the best Essay on the following subject, which he worded himself. We agreed to do it in the usual way, and get referees to referee the Essays when they come in. The subject is:—

> "The Best, Least Irksome, and Least Costly Method of Securing the Male Able-bodied Youth of this Country for Service in the Regular and Auxiliary Forces as Existing, and the Expansion of those Forces in Time of War."

We have made three prizes, 100 guineas for the first, 30 guineas for the second, and 10 guineas for the third, in order to encourage writers to write. The gentleman wanted it open to the whole of the Empire; but out of consideration for the referees, we asked him to limit it to the usual people that compete for our prizes, which is a very large order indeed, as it admits everybody here and in the Colonies.

Lieut.-General the Hon. Sir N. G. LYTTELTON, K.C.B.:—I have been invited to propose a vote of thanks to the following members of the Council who, having served three years, now retire:—

Naval.

Admiral Sir Cyprian A. G. Bridge, G.C.B.
Admiral Sir N. Bowden-Smith, K.C.B.
Rear-Admiral H.S.H. Prince Louis of Battenberg, G.C.B., G.C.V.O., A.D.C. (proceeding on foreign service).
Captain G. A. Ballard, R.N.

Military (Regular Army).

General Lord Methuen, G.C.B., K.C.V.O., C.M.G.
Major-General Sir George Marshall, K.C.B.
Major-General Lord Cheylesmore.
Major W. Anstruther-Grey.

Militia.

Colonel F. C. Romer, C.M.G.

Volunteers.

Colonel S. G. Bird, C.B.

I am afraid I am one of the four thousand members to whom Colonel Hale referred. I have not much knowledge of the working of the Institution in past days, so that I do not know really how things have gone. I know, however, most of the generals whose names I have read out, and I am quite sure their duties were discharged in a thoroughly satisfactory and conscientious way, as would be expected. I was glad to hear the Chairman give us the subject of the new Essay. The winner of that Prize Essay, I think, would be fully capable of taking my place on the General Staff if he satisfies everybody who reads his Essay. The more the question is threshed out the better. I am always very glad to hear of anything of that sort being propounded.

Lieut.-General Sir WILLIAM WRIGHT, K.C.B.:—I have great pleasure in seconding the resolution. On behalf of the naval members I can only say that they are very good men.

The resolution was carried with acclamation.

The CHAIRMAN:—A ballot will be now taken to fill four naval and four military seats on the Council. The names will be found on the ballot papers, and if you will kindly make a cross against those whom you vote for and give them to the scrutineers, the ballot can proceed.

Colonel E. T. Rodney Wilde and Lieutenant H. T. A. Bosanquet, R.N., were appointed scrutineers of the ballot, which then proceeded.

Colonel LONSDALE HALE:—While the ballot is going on, our time may be very usefully employed in passing a certain vote of thanks. You have been told of the extreme generosity of the donor of a sum of 150 guineas for an Essay. That gentleman did not wish his

name to be known. When he announced this he was asked to interview the Journal Committee, and we had a long talk with him over the subject. Originally his idea was that anybody should compete for the Essay; but we found that impracticable. He met our views in the pleasantest way possible, and we have carried the matter out as far as possible in accordance with his own personal instructions. As this is the Annual Meeting of the year, and a decision will be come to in September, I suggest that we might go outside the agenda paper and propose from the General Meeting of the Institution a vote of thanks to the unknown generous donor for this munificent gift.

Admiral the Right Hon. Sir JOHN C. DALRYMPLE-HAY, Bart., G.C.B., seconded the motion, which was carried unanimously.

The CHAIRMAN announced the result of the ballot to be as follows:—

For the Navy.

Admiral Sir Robert H. Harris, K.C.B., K.C.M.G. (President of the Royal Naval College, Greenwich).
Captain Charles L. Ottley, M.V.O., R.N. (Director of Naval Intelligence).
Captain George A. Ballard, R.N. (Assistant Director of Naval Intelligence).
Captain Edmond J. W. Slade, M.V.O., R.N. (Captain of the Royal Naval College, Greenwich).

For the Army.

Major-General Sir George Marshall, K.C.B.
Field-Marshal Earl Roberts, V.C., K.G., etc.
Major-General R. S. S. Baden-Powell, C.B. (Inspector of Cavalry).
General Lord William Seymour, K.C.V.O.

There being no competition for the Militia and Volunteer seats, Colonel the Duke of Bedford, K.G., commanding 3rd Battalion the Bedfordshire Regiment, and Lieut.-Colonel C. E. H. Hobhouse, M.P., commanding 3rd Volunteer Battalion the Gloucestershire Regiment, were declared elected.

A vote of thanks was accorded to the scrutineers for their work.

Admiral the Hon. Sir E. R. FREMANTLE, G.C.B., C.M.G.: — Gentlemen, we have just passed a vote of thanks to the anonymous donor of 150 guineas, and I am very glad

it was moved by a member of the Council, Colonel Lonsdale Hale, to whom we owe a great deal. I am quite sure that no naval officer has given so much attention, so much time, and so much work to the affairs of this Institution as our Chairman to-day, Sir Nathaniel Bowden-Smith. I am extremely sorry to hear that he does not wish to be re-elected. I am told that he is going to retire from the Council. All I can say is that we in the Navy, and I think I might also answer for the Army too, will feel we have lost an extremely good man, and one whom it will be difficult to replace. I have the pleasing duty to propose "That a vote of thanks be accorded to Admiral Sir N. Bowden-Smith, K.C.B., for presiding at this meeting." We know that when Sir Nathaniel Bowden-Smith is in the Chair we have a courteous, a fair, and a firm Chairman.

Colonel Sir W. A. BAILLIE-HAMILTON, K.C.M.G., C.B.:—I have very great pleasure in seconding that resolution. No one who has had the honour and pleasure of serving with Sir Nathaniel Bowden-Smith on the Council can fail to appreciate the remarkable ability and energy which he has at all times devoted to the interests of the Institution. The work of the Chairman of the Council is not always easy, and I am quite sure no Chairman could be found to discharge it with more ability and tact than Sir Nathaniel Bowden-Smith. Although he is leaving us for a time, I hope at some future date we shall see him back again on the Council.

The resolution was carried with acclamation.

The CHAIRMAN:—Sir Edmund Fremantle, Sir William Baillie-Hamilton, and gentlemen, I have to thank you for the very kind vote of thanks which you have made in much too flattering a way. I can only say there are just as good fish in the sea as ever came out of it.. This fish has been too long out of the sea to be as good as those that are coming out, because they are more fresh from the sea than I am.

The meeting then closed.

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